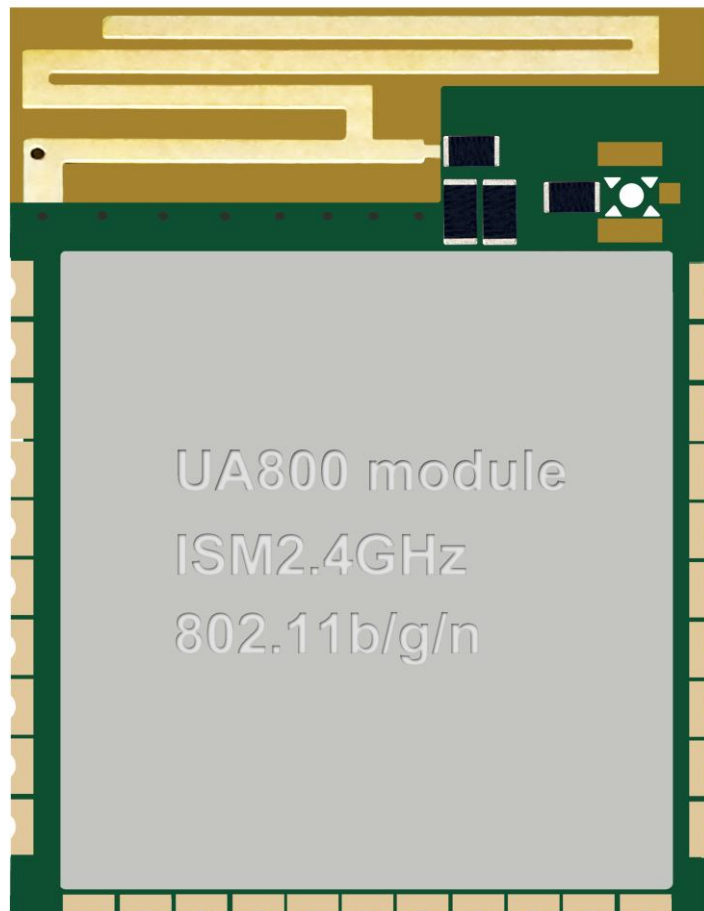


# ShenZhen Gather Genius Technology Limited



**UA800 Wi-Fi Module**

**FCC ID: 2ALLFUA800**

Specification

Version 1.1

DATE: 2018.3.6

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## 1. GENERAL DESCRIPTION

The UA800 module supports standard IEEE802.11 b/g/n protocol, TCP/IP stack and support STA, AP, STA+AP work mode. It can be used in the present device for additional Wi-Fi feature, or to design standalone network controller.

UA800 is a total solution for Wi-Fi network, which can be used separately. It can boot from external flash directly and designed to work with external MCU. In this case, UA800 can be added to any micro-controller system through UART interface.

UA800 is highly integrated with antenna switch, BALUN, PA, PMU. It just needs a few components for external circuit, which help to save the PCB room and cost furthest.

### 1.1. Features

- Support 802.11 b/g/n;
- Embedded TCP/IP protocol stack;
- Integrated TR switch/Balun/LNA/PA/antenna;
- MCU clock frequency up to 160M, internal cache 8kB;
- Integrated 16Mbits flash;
- **Supply voltage range: 3.0V~3.6VDC, single 3.3V is recommended to use.**
- Support OTA firmware upgrade, which can be initiated with mobile phone APP and AT command;
- Support STA, AP mode;
- Support Smart Link;
- Support WEP/TKIP/WPA/WPA2 protocol;
- Support 802.11e and WMM/WMM PS;
- Support UART/I2C/SPI;
- Support HT20/40;
- Support 4 channel hardware PWM;
- Support USB 2.0 high speed;
- Support SDIO 2.0.

	parameter	description
Hardware feature	<i>General description</i>	
	Network standard	802.11 b/g/n
	Frequency range	2.4GHz-2.5GHz (2400M-2483.5M)
	Supply voltage	3.0~3.6V ( single 3.3V is recommended )
	Operating current	Max: 330mA
	MCU operation frequency	160MHz
	FLASH	16M ( bits )
	SRAM	192KByte ( 120 KB available to users )
	Package	15mm * 20mm * 2.8mm
	Pin type and number	Stamp hole, 31pin
	Antenna	In PCB
	Operation temperature range	-20°~85°C
	Storage temperature range	-40°~125°C
	<i>Hardware interface</i>	
	UART	Support 2 UART, one for download and debug, one for communication with external chip or device
	I2C	Support 1 I2C
	GPIO	Support 16 GPIO , shared with UART , I2C , PWM
	PWM	Support 4 HW PWM
	ADC	Support 4ADC
	SPI	Support 1 SPI slave
	USB	Support 1 USB 2.0
	SDIO	Support 1 SDIO 2.0
Software feature	Work mode	STA/AP
	Security mechanism	WEP/WPA-PSK/WPA2-PSK

	Encryption type	WEP/TKIP/WPA/WPA2
	Firmware upgrade	UART/OTA
	Network protocol	TCP/UDP/DHCP/ARP/ICMP
	Customer configuration	AT+ Instruction Set, Smart LinkAPP

Table 1 Major hardware and software features

## 2. Pin assignment

There are 31 pins in UA800 module, Figure1 is the pin assignment, Table 2 is the pin definition.

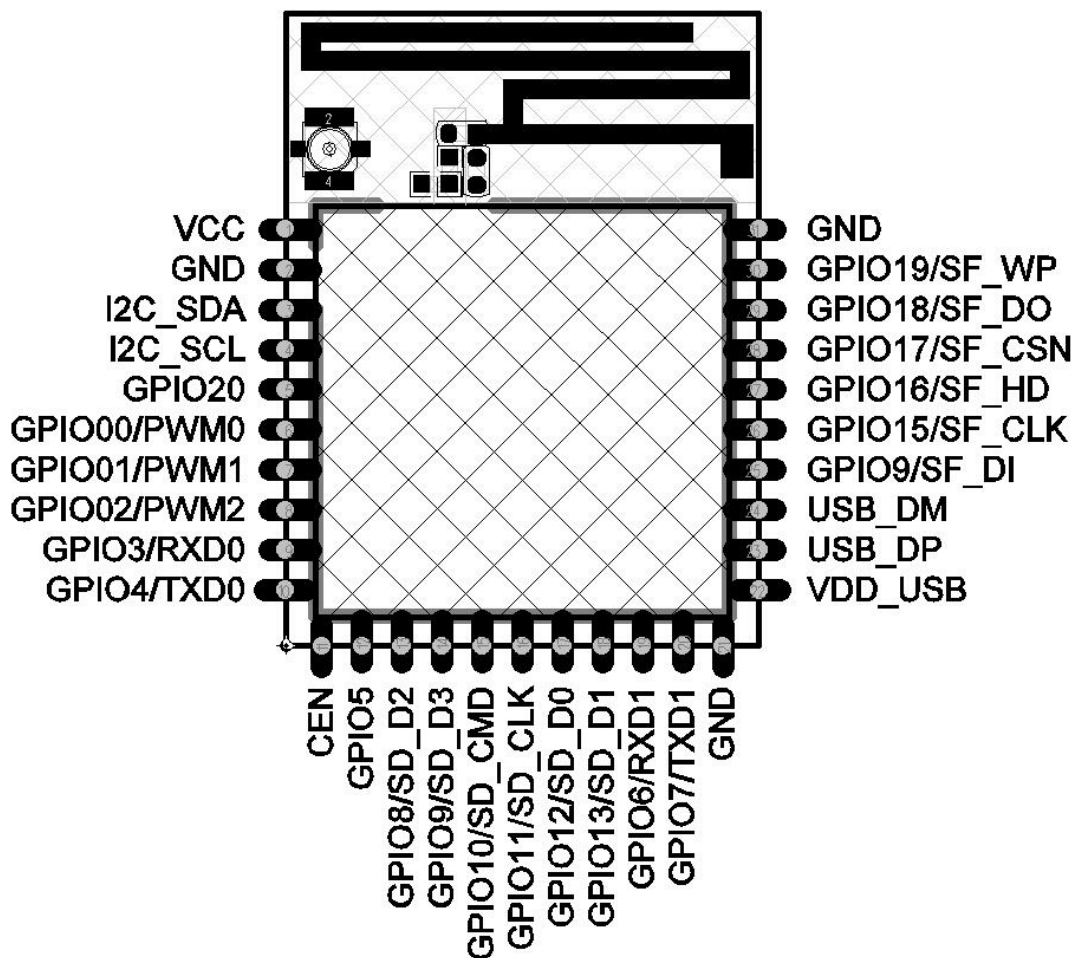


Figure 1UA800 pin assignment

No.	Pin name	Description
1	VCC	2.4V~3.6V supply voltage , 3.3V recommended
2	GND	GND
3	I2C_SDA	I2C serial data line
4	I2C_SCL	I2C clock line
5	GPIO20	IO interface
6	GPIO00/PWM0	IO interface or PWM0
7	GPIO01/PWM1	IO interface or PWM1
8	GPIO02/PWM2	IO interface or PWM2
9	GPIO03/RXD0	IO interface or UART0RXD , for debug UART reception
10	GPIO04/TXD0	IO interface or UART0RXD , for debug UART sending
11	CEN	Reset, low effective(controlled by external MCU IO)
12	GPIO05	IO interface
13	GPIO8/SD_D2	IO interface or SDIO DATA2
14	GPIO9/SD_D3	IO interface or SDIO DATA3
15	GPIO10/SD_CMD	IO interface or SDIO CMD
16	GPIO11/SD_CLK	IO interface or SDIO CLK
17	GPIO12/SD_D0	IO interface or or SDIO DATA0
18	GPIO13/SD_D1	IO interface or or SDIO DATA1
19	GPIO6/RXD1	IO interface or UART1 RXD , for UART reception , RF calibration and test with AT command
20	GPIO7/TXD1	IO interface or UART1 RXD , for UART sending , RF calibration and test with AT command
21	GND	GND

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22	VDD_USB	USB 3.3V POWER SUPPLY
23	USB_DP	USB data bus D+
24	USB_DM	USB data bus D-
25	GPIO9/SF_DI	FLASH data input when downloading
26	GPIO15/SF_CLK	FLASH download clock
27	GPIO16/SF_HD	FLASH hold when downloading
28	GPIO17/SF_CSN	FLASH chip selection when downloading
29	GPIO18/SF_DO	FLASH data output when downloading
30	GPIO19/SF_WP	FLASH write protection when downloading
31	GND	GND

Table 2 UA800 pin definition

### 3. Package and dimensions

The dimensions of UA800 module is 15mm \* 20mm \* 2.8mm ( Figure 3), and it integrates 8Mb SPI Flash and 0 dBi PCB antenna.



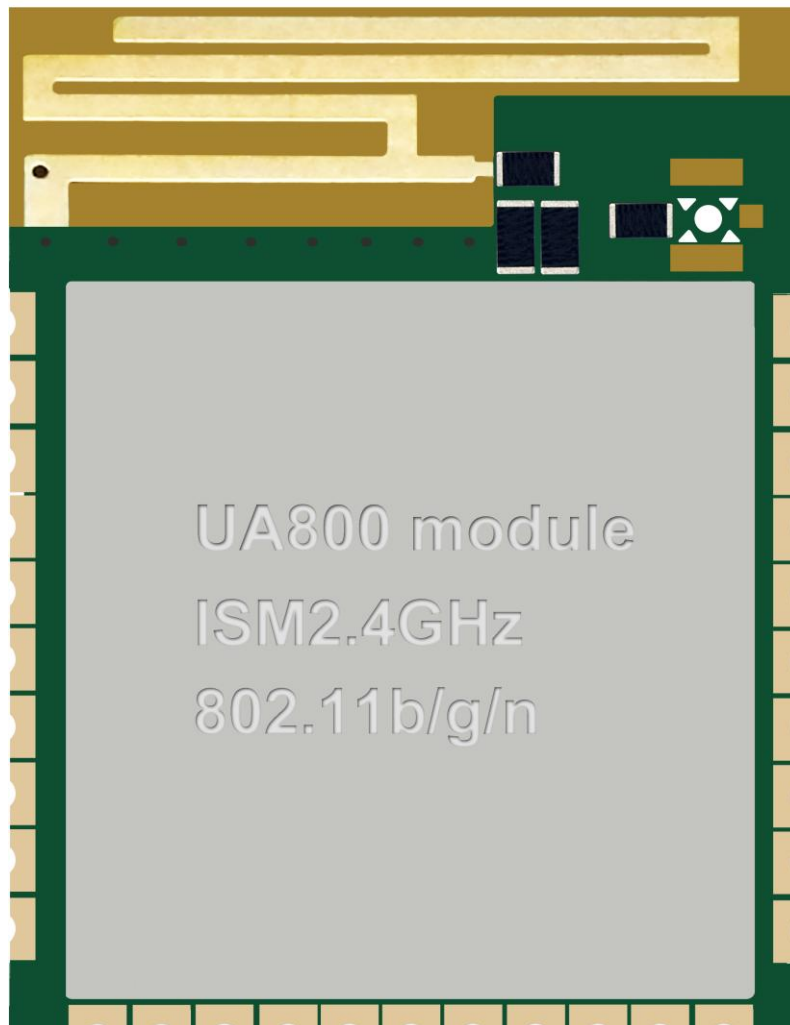


Figure 2UA800module exterior

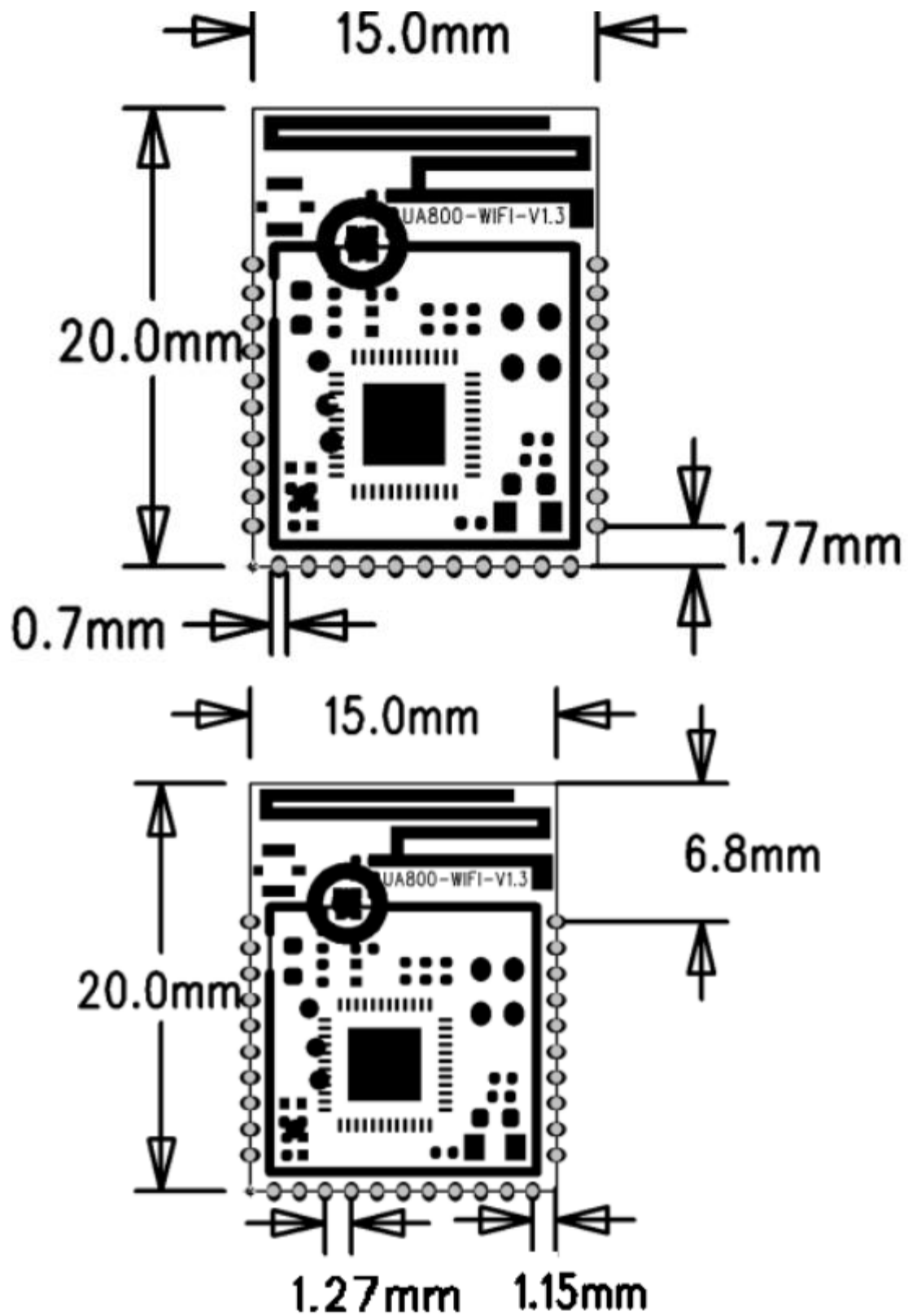


Figure 3UA800 module dimensions

Length	width	height	PAD ( bottom )	Pin pitch
20 mm	15 mm	2.8 mm	0.7 mm x 1.2 mm	1.27 mm

Table 3 UA800 module dimensions

## 4. Hardware design

### 4.1. Minimum system

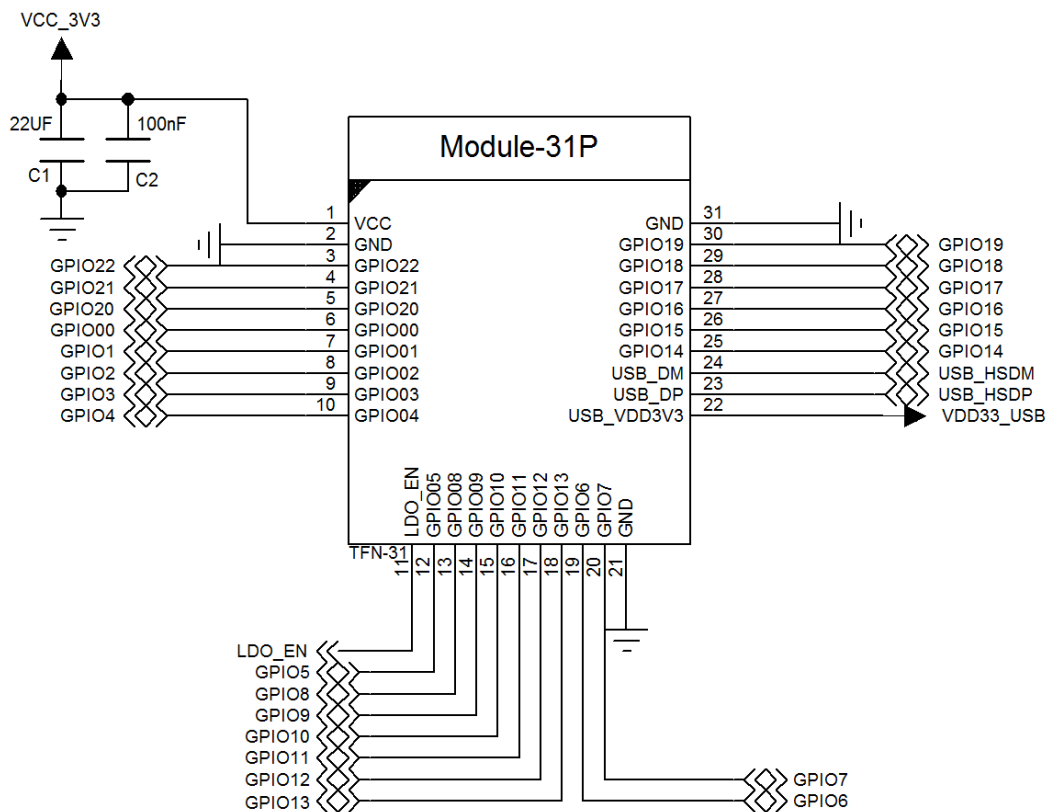


Figure 4UA800

Note:

1. Supply voltage 3.3V and supply current no less than 300mA are recommended.

- 
2. The maximum drive current of GPIO interface is 4mA.
  3. RST works in low-level. Built-in 10k pull-up resistor ,controlled by external MCU IO.
  4. The RXD is connected to external MCU TXD and TXD connected to external MCU RXD.
  5. Connecting debug UART interface and pull RST down 15ms then release when upgrade the firmware. Another method is software resetting.
  6. OTA firmware upgrade can be started with APP, AT instruction and IO interface.

## 4.2. PCB guideline

For the best RF performance when the module welded on the PCB ,the copper 、 components、 routing can not be under the antenna and make sure enough clearance area as following diagram.

Figure 5UA800 module antenna clearance diagram

## 5. Main function description

### 5.1. MCU

The MCU of UA800 is a low-power single chip, it supply integrated solution for embedded smart family system. It integrated 2.4 GHz WLAN CMOS PA and LNA. The RF front-end is single-ended double-direction. Also, it integrates LDO and DC-DC converter, which can separate digital circuit and analog circuit for lower noise.

### 5.2. Memory

#### 5.2.1. Built- in SRAM

UA800 integrates 192KB SRAM.

#### 5.2.2. SPI Flash

UA800 module collocates 16Mb FLASH.

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## **5.3. Interface**

### **5.3.1. UART**

It support two UART supported which maximum baud rate up to 6 Mbps. It support not only 5 , 6 , 7 bit data, but even-odd check or no check mode, 1 to 2 bit stop bits.

### **5.3.2. SPI**

Support a high-speed SPI interface, its clock frequency up to 50 MHz. Support for SPI master-slave mode. The received data edge may be configured as ascending edge or descent edge. The data bits sent can be send first either low or high . Since a free-running DMA engine built-in SPI ,high throughput can be achieved without MCU working.

### **5.3.3. SDIO**

Support for master-slave mode , Support for standard single-thread and 4-thread modes, its clock frequency up to 50 MHz. SDIO interface can be used to read SD card in master mode, slave mode can be used for external host to communicate with internal master through SDIO. Since a free-running DMA engine built-in SDIO ,high throughput can be achieved without MCU working.

### **5.3.4. I2C**

Support for one hardware I2C which maximum rate up to 400 kHz (required external pull-up resistor).

### **5.3.5. USB**

Support for high speed USB 2.0. Acted as host and device. Since a free-running DMA engine built-in USB ,high throughput can be achieved without MCU working.

### **5.3.6. ADC**

Built-in multichannel ADC and average-filter which supported 10~13 bit output. ADC supports single mode, continuous mode, and software mode.

### **5.3.7. PWM**

PWM supported.

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### 5.3.8. GPIO

Support for multiple GPIOs, each of these can be configured as interrupt source. System can be wake up with it during sleep mode. Most of the GPIO can also be configured as peripheral interface as following:

GPIO	Multiplexing function
GPIO00	PWM0
GPIO01	PWM1
GPIO02	PWM2
GPIO03	UART0_RXD
GPIO04	UART0_TXD
GPIO05	UART1_RTS
GPIO06	UART1_RXD
GPIO07	UART1_TXD
GPIO08	SDIO_D2
GPIO09	SDIO_D3/UART1_CTS
GPIO10	SDIO_CMD
GPIO11	SDIO_CLK
GPIO12	SDIO_D0
GPIO13	SDIO_D1
GPIO14	SF_DI
GPIO15	SF_CLK
GPIO16	SF_HD
GPIO17	SF_CSN
GPIO18	SF_DO
GPIO19	SF_WP
GPIO20	WIFI_WAKE_HOST
GPIO21	I2C_SCL/HOST_WAKE_WIFI
GPIO22	I2C_SDA

Table 4 IO Multiplexing function

### 5.3.9. FLASH download mode

PIN name	GPIO14	GPIO15
Normal work mode	NC/0	NC/0
Flash download mode ( P20~23 for download )	1	1

Table5 mode selection

## 5.4. Absolute maximum ratings

	conditions	range	unit
Storage temperature	-	-40 to 125	°C
Highest temperature for soldering	-	250	°C
<b>Supply voltage</b>	-	<b>-0.3 to +3.6</b>	<b>V</b>

Table 6 absolute maximum ratings

## 5.5. Recommended operating range

Operation condition	name	Min.	Type	Max.	Unit
Temperature		-20	20	85	°C
<b>Voltage</b>	<b>VDD</b>	<b>2.85</b>	<b>3.3</b>	<b>3.6</b>	<b>V</b>

Table 5 recommended work conditions

## 5.6. Digital IO DC characteristics

description	Name	Min	Type	Max	Unit
Input low level	V <sub>IL</sub>	-0.28	-	0.6	V
Input high level	V <sub>IH</sub>	2.0	-	3.63	V

Output low level	V <sub>OL</sub>	-0.28	-	0.4	V
Output high level	V <sub>OH</sub>	2.4	-	VDD+0.33	V

Notice: If no special instruction, the test conditions are: the VDD is 3.3V and the temperature is 20 °C.

Table 7 digital level feature

## 6. RF specification

Parameter	Min.	Type	Max.	Unit
General parameter				
Frequency	2412		2462	MHz
Input impedance		50		Ω
Transmit power				
Output power ( 802.11b@11Mbps )	20	20	20	dBm
Output power ( 802.11g@54Mbps )	22	22	22	dBm
Output power ( 802.11n@HT20,MCS7 )	21	21	21	dBm
Receive sensitivity				
Sensitivity ( 802.11b@11Mbps,CCK )	-86.0	-87.0	-88.0	dBm
Sensitivity ( 802.11g@54Mbps,OFDM )	-70	-72	-73.5	dBm
Sensitivity ( 802.11n@HT20,MCS7 )	-68	-70	-72	dBm
Adjacent channel rejection				
OFDM, 6 Mbps		37		dB
OFDM, 54 Mbps		21		dB
HT20, MCS0		37		dB
HT20, MCS7		20		dB



Table 8 RF specification

## 7. Power consumption

Mode	Min	Type	Max	Unit
Transmit 802.11b, CCK 11Mbps, P <sub>OUT</sub> = +18.5dBm		250		mA
Transmit 802.11g, OFDM 54Mbps, P <sub>OUT</sub> = +15dBm		220		mA
Transmit 802.11n, MCS7, P <sub>OUT</sub> = +15dBm		220		mA
Receive 802.11b,CCK,1Mbps		60		mA
Receive 802.11g,OFDM,54Mbps		60		mA
Receive 802.11n,HT20,MCS7		60		mA
RX Power Saving, DTIM=1		2		mA
Sleep Mode		0.2		mA
Operating Mode		75		mA
Power Off		4		uA

Table 9 power consumption ( The data are based on 3.3V VCC. )

## 8. Recommended Reflow Profile

Peak Temperature: <250°C

Number of Times: ≤2 times

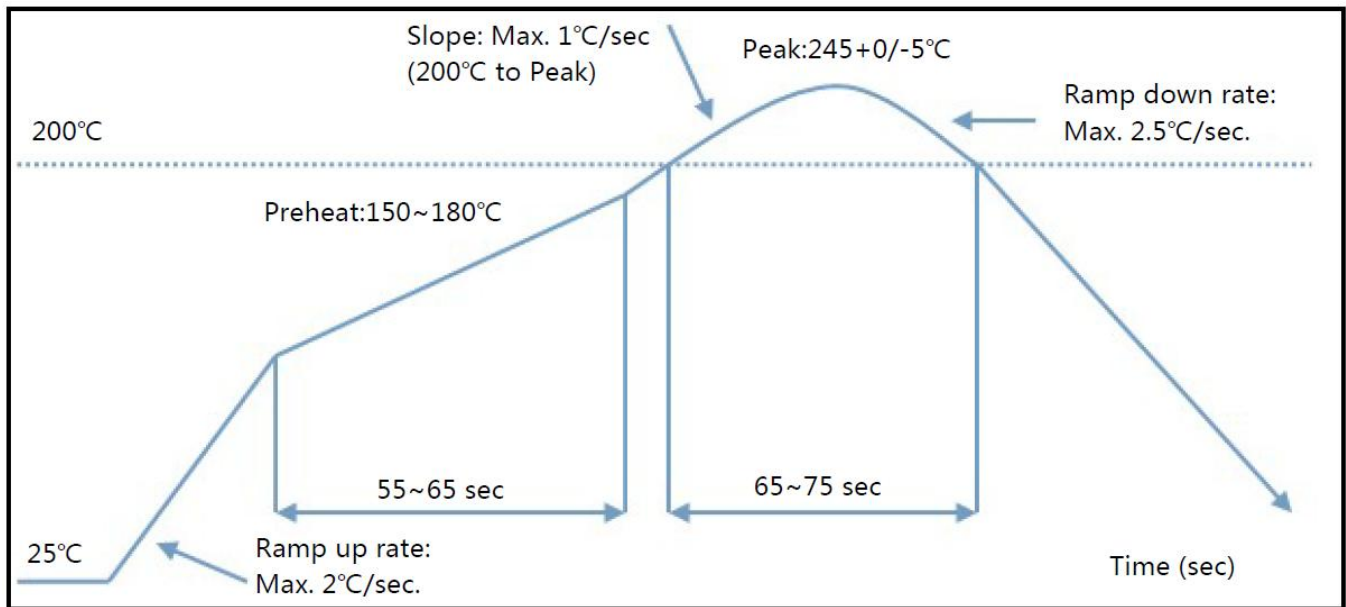


Figure 6 Soldering temperature curve

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## 9. AT instruction

### 9.1. General AT instruction description

#### 9.1.1. Reset

Instruction	AT+REBOOT
parameter	N
return	N

#### 9.1.2. Read firmware version

Instruction	AT+VERSION=?
parameter	N
return	The firmware version number
example	ssv6060>:AT+VERSION=? +VERSION:SSV6060.Z0.799.0

#### 9.1.3. Read manufacture information

Instruction	AT+MF_INFO=?
parameter	N
return	Manufacture information
example	ssv6060>:AT+MF_INFO=? +MF_INFO:iComm Company AT+VERSION=OK

#### 9.1.4. Read MAC

Instruction	AT+RADIO_READ_MAC=?
-------------	---------------------

parameter	N
return	Media Access Control Address
example	ssv6060>:AT+GET_LOCALMAC=? local_mac = 00:23:45:67:87:a5

### 9.1.5. Remove

Instruction	AT+REMOVE_CONF
parameter	N
return	Remove result.
example	ssv6060>:AT+REMOVE_CONF remove_sysconfig rlt = 0

## 9.2. Operation instruction description

### 9.2.1. Read network configuration

Instruction	AT+GET_CONFIG=?
parameter	N
return	+GET_CONFIG= wifi_mode, AP_SSID, key, key number, dhcp, IP, Submask ,Gateway
example	If dhcp =1 +GET_CONFIG=0, 7298A, 12345678, 8, 1, 0.0.0.0, 0.0.0.0, 0.0.0.0 If dhcp =0 +GET_CONFIG=0, 7298A, 12345678, 8, 0, 192.168.55.243, 255.255.255.0, 192.168.55.1

### 9.2.2. Set network configuration manually

Instruction	AT+SET_IFCONFIG= <dhcp> , <IP> , <Submask> , <Gateway>
parameter	<dhcp>: 1:Auto , 0: manual <IP>:xxx.xxx.xxx.xxx (if Dhcp =0) <Submask >: xxx.xxx.xxx.xxx (if Dhcp =0)

	<Gateway>: xxx.xxx.xxx.xxx (if Dhcp =0)
return	AT+SET_IFCONFIG =OK
example	AT+SET_IFCONFIG=0, 192. 168. 55. 243, 255. 255. 255. 0, 192. 168. 55. 1 AT+SET_IFCONFIG=1

### 9.2.3. Set Wi-Fi configuration

Instruction	AT+SET_WIFICONFIG= <mode>, <AP_SSID>, <Key>
parameter	<mode>: 0: STA-mode <AP_SSID> : AP name <Key> : AP password
return	AT+SET_WIFICONFIG=OK
example	AT+SET_WIFICONFIG=0, 7298A, 88888888

### 9.2.4. Scan Wi-Fi router

Instruction	AT+SCAN=?
parameter	N
return	+SCAN:7298A, SSV-AP5_2.4G, QA.DIR524, SSV_AP2, TP-LINK_45FE5E, D-Link_DIR-Jay, APET, test, 00X, for.interchannel.wr845n, for.interchannel.c8, Eric_Fw, SSV_AP2, icomm-softap-002345678916, Winnie_NB-PC, EnGenius_wpa2aes, AT+SCAN=OK

### 9.2.5. Connect Wi-Fi router

Instruction	AT+WIFICONNECT
parameter	N
return	AT+WIFICONNECT=OK
example	If dhcp =1 Got IP address 192.168.43.16 Got netmask 255.255.255.0

---

	Got DNS server 192.168.43.1 Got default router 192.168.43.1
--	--

### 9.2.6. Disconnect Wi-Fi router

Instruction	AT+WIFIDISCONNECT
parameter	N
return	N

### 9.2.7. Show the AP information

Instruction	AT+SHOWCONNECTAP
parameter	N
return	[0]7298A, ch: 1, rssi: -29 dBm, rssiLevel: 4, security_type = WPA2/AES , HT-MM SGI MCS7

### 9.2.8. Show all AP

Instruction	AT+SHOWALLAP
parameter	N
return	[0]7298A ch: 1, rssi: - 26 dBm, rssiLevel: 4, security_type = WPA2/AES [1]AP5_2.4G ch: 1, rssi: - 42 dBm, rssiLevel: 4, security_type = WPAWPA2/AES [2]QA.DIR524 ch: 1, rssi: - 47 dBm, rssiLevel: 4, security_type = OPEN/NONE [3]D-Link_DIR-Jay ch: 2, rssi: - 80 dBm, rssiLevel: 2, security_type = OPEN/NONE

---

## 9.3. TCP/UDP port

### 9.3.1. Set TCP port

Instruction	AT+TCPCONNECT=<IP>, <PORT>
parameter	IP : xxx. xxx. xxx. xxx, ex:192. 168. 112. 10 PORT : xxxx, ex:2000
return	socket number : create socket:0

### 9.3.2. TCP transmission

Instruction	AT+TCPSEND=<socket number>, <data>
parameter	socket number : the socket number got through TCPCONNECT data : string, ex:12345678
return	AT+TCPSEND=OK

### 9.3.3. Clear TCP port

Instruction	AT+TCPDISCONNECT=<socket>
parameter	N
return	AT+TCPDISCONNECT=OK
example	ssv6060>:AT+TCPDISCONNECT=0 ssv6060>:socked:0 closed AT+TCPDISCONNECT=OK

### 9.3.4. Set up TCP SERVER link

Instruction	AT+TCPLISTEN=<PORT>
parameter	PORT: number ; ex :2000
return	AT+TCPLISTEN=OK
example	ssv6060>:AT+TCPLISTEN=2000 AT+TCPLISTEN=OK ssv6060>:new connected to listen port(2000), socket:0

### 9.3.5. Clear TCP SERVER link

Instruction	AT+TCPUNLISTEN=<PORT>
parameter	PORT: number ; ex :2000
return	AT+TCPUNLISTEN=OK

### 9.3.6. Set up UDP port

Instruction	AT+UDPCREATE=<PORT>
parameter	PORT: number ; ex :2000
return	Socket number : create socket:12
example	ssv6060>:AT+UDPCREATE=2000 create socket:12 AT+UDPCREATE=OK

### 9.3.7. UDP transmission

Instruction	AT+UDPSEND=<socket>,<Client IP>,<port>,<Data>
parameter	<socket> : the socket number got through UDPCREATE <Client IP> : xxx.xxx.xxx.xxx;ex: 192.168.112.10 <port>: port number <Data>: string
return	N
example	AT+UDPSEND=12,192.168.43.23,11111,asdfgh ssv6060>:UDP socked:12 recvdata:fgshfshfh from 192.168.43.23:61148

### 9.3.8. Close UDP

Instruction	AT+UDPCLOSE =<socket>
parameter	<socket> : the socket number got through UDPCREATE
return	AT+UDPCLOSE=OK



example	ssv6060>:AT+UDPCLOSE=12 AT+UDPCLOSE=OK
---------	---

### 9.3.9. NSLOOKUP

Instruction	AT+NSLOOKUP=<domain name>
parameter	<domain name> : the URL domain name
return	The ip address of domain name.
example	ssv6060>:AT+NSLOOKUP=www.163.com start nslookup www.163.com ssv6060>:AT+NSLOOKUP=218.92.220.55

## 9.4. GPIO/PWM instructions description

### 9.4.1. Set GPIO direction

Instruction	AT+SET_GPIO=<id>,<mode>
parameter	<id>: GPIO ID. <mode>: 0:input ; 1:output.
return	+OK
example	ssv6060>:AT+SET_GPIO=2,1

### 9.4.2. Write GPIO

Instruction	AT+WRITE_GPIO=<id>,<value>
parameter	<id>: GPIO ID. <value>: 0:low ; 1:high.
return	+OK
example	ssv6060>:AT+WRITE_GPIO=2,1

### 9.4.3. Read GPIO

Instruction	AT+READ_GPIO=<Number>
parameter	<Number>
return	On: 1 ; Off: 0
example	ssv6060>:AT+READ_GPIO=3 +GPIO:1

### 9.4.4. Set PWM

Instruction	AT+SET_PWM=<id>,<Enable>,<Cycle>
parameter	<id>:GPIO ID = 5 (default GPIO8) <Enable>: 0 , 1 <Cycle>: 0 ~ 10
return	ssv6060>:AT+SET_PWM=5, 1, 0 +OK

## 9.5. SMART LINK instruction description

### 9.5.1. Change mode

Instruction	AT+ENABLE_SMARTREBOOT=<type>
parameter	<type> : 0 : NO Smart Link 1 : ICOMM Smart Link 2 : WECHAT 3 : USER
return	N
Note	Need reset to change the mode

## 9.6. SOFT AP instructions description

### 9.6.1. Enter AP mode

Instruction	AT+AP
-------------	-------

parameter	N
return	[At_AP] : +++

### 9.6.2. Exit AP mode

Instruction	AT+AP_EXIT
parameter	N
return	[At_AP_EXIT] : +++

### 9.6.3. Set SSID name in AP mode

Instruction	AT+SET_AP_SSID=<name>
parameter	<name>:SSID
return	<gconfig_set_softap_ssid> new_softap_ssid=ABC <gconfig_set_softap_ssid> i_config.softap_ssid=ABC
example	ssv6060>:AT+SET_AP_SSID=ABC [At_SET_AP_SSID] : +++ <gconfig_set_softap_ssid> new_softap_ssid=ABC <gconfig_set_softap_ssid> i_config.softap_ssid=ABC

## 9.7. RF instructions description

### 9.7.1. Start RF test mode

Instruction	AT+RADIO_RF_START=<range>
parameter	<range> = 0
return	N
example	AT+RADIO_RF_START=0

---

### 9.7.2. SET CHANNEL

Instruction	AT+RADIO_CHANNEL=<range>
parameter	<range> =1~13
return	N
example	AT+RADIO_CHANNEL=12

### 9.7.3. Wi-Fi PACKET FORMAT

Instruction	AT+RADIO_RF_RATE=<range>
parameter	<range>:0~30
return	N
example	AT+RADIO_RF_RATE=22

### 9.7.4. G/N MODE GAIN

Instruction	AT+RADIO_RF_GNGAIN= <range>
parameter	<range>:5~15
return	N
example	AT+RADIO_RF_GNGAIN=7

### 9.7.5. B MODE GAIN

Instruction	AT+RADIO_RF_BGAIN= <range>
parameter	<range>:5~15
return	N
example	AT+RADIO_RF_BGAIN=2

---

### 9.7.6. Read IC temperature

Instruction	AT+RADIO_RF_READ_TEMP_CS=?
parameter	N
return	temperature ° C Ex: AT+RADIO_RF_READ_TEMP_CS=28
example	AT+RADIO_RF_READ_TEMP_CS=?

### 9.7.7. Exit RF test mode

Instruction	AT+RADIO_RF_STOP
parameter	N
return	N
example	AT+RADIO_RF_STOP

### 9.7.8. Reset

Instruction	AT+REBOOT
parameter	N
return	N
example	AT+REBOOT

### 9.7.9. Close compensation table

Instruction	AT+RADIO_RF_ENABLE_TCSR=<on/off>
parameter	<on/off>: 0:Off ; 1:On
return	N
example	AT+RADIO_RF_ENABLE_TCSR=0

### 9.7.10. Frequency offset compensation

Instruction	AT+RADIO_RF_FREQOFFSET=<p range>, <n range>
parameter	<p range>:1~16 <n range>:1~16
return	N
example	AT+RADIO_RF_FREQOFFSET=7, 7

### 9.7.11. List ALL RF compensation

Instruction	AT+RADIO_RF_DUMP
parameter	N
return	List ALL RF compensation Ex: ===== channel = 1 B power = 11 G/N power = 9 Freq. Offset = 2, 2 LDO = 4b661c PA1 = 3d5e84ff PA2 = 1457d79 PA3 = fccccce27 Boundary = 0, 0 =====
example	AT+RADIO_RF_DUMP

### 9.7.12. RF\_LDO TUNING

Instruction	AT+RADIO_RF_LDO=<n range>, <m range>
parameter	<n range>:1~8 <m range>:5~8
return	N
example	AT+RADIO_RF_LDO=7, 7

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### 9.7.13. RF\_PA1 TUNING

Instruction	AT+RADIO_RF_PA1= <range>
parameter	<range>:6~12
return	N
example	AT+RADIO_RF_PA1=8

### 9.7.14. RF\_PA2 TUNING

Instruction	AT+RADIO_RF_PA2= <range>
parameter	<range>:1~7
return	N
example	AT+RADIO_RF_PA2=1

### 9.7.15. RF\_PA3 TUNING

Instruction	AT+RADIO_RF_PA3= <range>
parameter	<range>:7~14
return	N
example	AT+RADIO_RF_PA3=14

### 9.7.16. RF\_IQ PHASE

Instruction	AT+RADIO_RF_IQPHASE=<range>
parameter	<range>: (-7~7)
return	N
example	AT+RADIO_RF_IQPHASE=0

### 9.7.17. RF\_ IQ AMP

Instruction	AT+RADIO_RF_IQAMP=<range>
parameter	<range>: (-7~7)
return	N
example	AT+RADIO_RF_IQAMP=0

## 9.8. Other description

### 9.8.1. Uart to Wi-Fi transfer

Instruction	AT+WIFIUART_DEMO=<en>
parameter	<en>: (enable, disable)
return	N. After enable WIFIUART mode, user use smart phone app or PC program connect to this module , the socket port is 12345, then, user can transfer data to wifi network by Data_Uart. The data string must be end with hex value 0x0D, or the length of string is equal to 128, then the datas will be sent out.
example	ssv6060>:AT+WIFIUART_DEMO=enable Call AT_WIFIUART_DEMO wifiUartDemo_process begin tcp_server_wifiUartProcess begin

#### Installation warning statement

(a)product should not collocate with other radio

(b) The UA800 Wi-Fi Module is designed to comply with the ID statement. FCC ID is 2ALLFUA800. The host system using MMBQ11 Wi-Fi Module, should have label indicated FCC ID 2ALLFUA800

(c) If you buy this module,you only use the the PCB antenna(ANT Gain:0dBi) of WIFI modular,Do not use the other antenna

(d): The UA800 Wi-Fi Module is Only applicable for the mobile device.



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## **FCC Statement**

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception,

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## **FCC RF Radiation Exposure Statement**

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body. for example Used in Such as air conditioning, televisions, etc.