Winext Airnode M200C

User manual

Contents

Chapter1 M200C Introduction

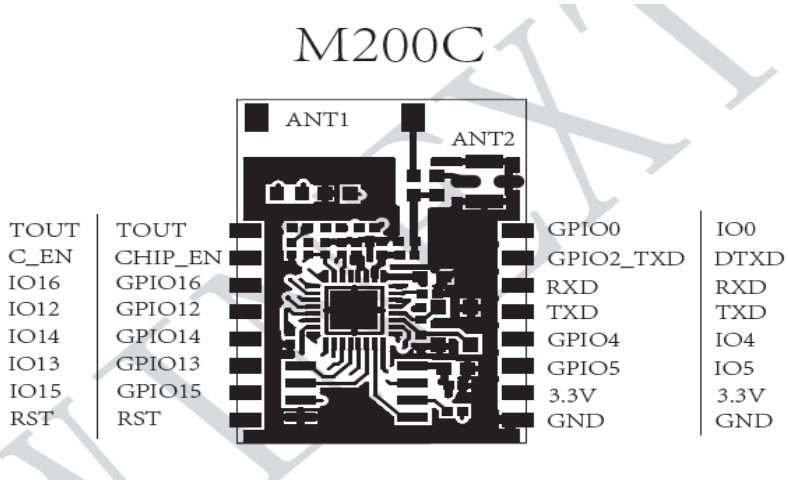
1. M200C Introduction

Picture1

M200C is one IOT module developed by Winext. It is small and powerful. With Winext cloud platform and APP, we can make home appliance access to internet and we can control the appliance by APP in smart phones.

- Cost effective
  MCU is 80MHZ，and ROM is 1MB. It can support AP hotspot and STA client mode. It supports 802.11.b/g/n，and can match most of the routers in the market. However, the price is very competitive.
- Easy to use
  M200C integrate cloud server connection, near-field control, Smartconfig configuration，RSA handshake authentication, AES data encryption, portl data passthrough. The clients can use M200C as a normal port, and product development can be shortened and the product will come online quickly.
- Stable
  M200Ccan support WIfi connection 24 hours a day. The firmware is stable and can make sure the data transfer stably.
- Safe
  M200C uses RSA handshake authentication and AES data encryption. This security Mechanism protect the data transmission.

2. M200C pin definition and function



Picture2

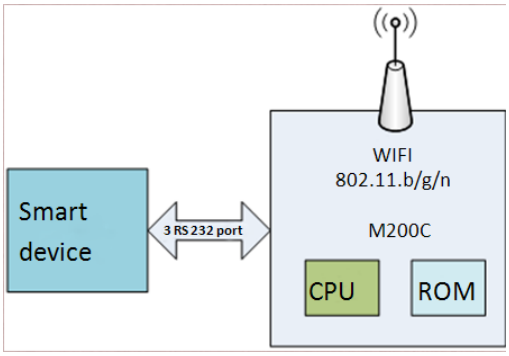
Connector type	Connector	Function
Left	TOUT	ADC pin
	CHIP_EN	
	XPD_DCDC/GPIO16	Deep sleep wake pin/GPIO16，3.3V/20mA
	GPIO12	1 PWM output/Same as GPIO12(Internal pull) ,3.3V/20mA
	GPIO14	GPIO14 internal pull，3.3V/20mA
	GPIO13	GPIO13 internal pull，3.3V/20mA
	GPIO15	GPIO15default low level，internal pull，3.3V/20mA
	RST	Reset
Right	GPIO0	Low level when burning
	GPIO2	Debug print TX（burning Flash）
	UART0_RXD	Community port U0RXD（burning flash）
	UART0_TXD	Community port U0TXD
	GPIO4	GPIO4 internal pull，3.3V/20mA
	GPIO5	GPIO5internal pull， 3.3V/20mA
	3.3V	3.3V power input pin（suggest 500mA）
	GND	ground

3. M200C parameter

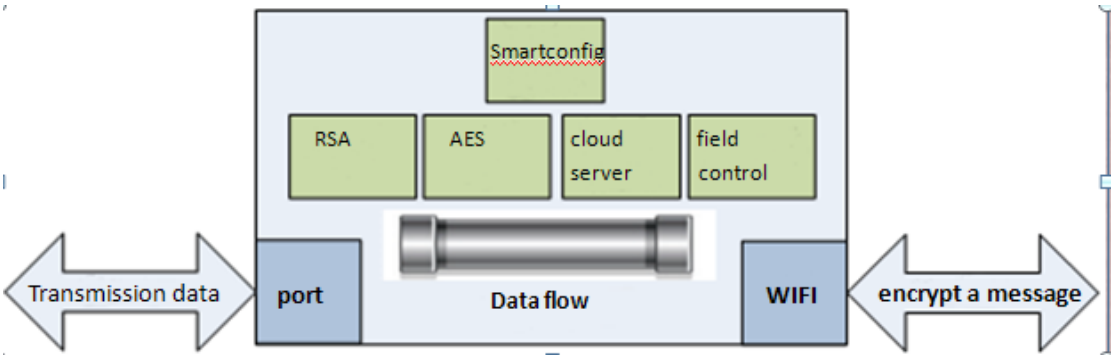
Module	**Model**	M200C
	Chip	CortexM4
Wireless parameter	**Wireless standard**	IEEE 802.11b/g/n
	Frequency range	2.412GHz-2.472GHz
	Transmit power	802.11b: +14 +/-2dBm (@11Mbps)
		802.11g: +14 +/-2dBm (@54Mbps)
		802.11n: +14 +/-2dBm (@HT20, MCS7)
	Receiving sensitivity	802.11b: -93 dBm (@11Mbps ,CCK)
		802.11g: -85dBm (@54Mbps, OFDM)
		802.11n: -82dBm (@HT20, MCS7)
	Antenna	Outer：I-PEX Connector
		Inter：Ceramic antenna，Peak Gain1.5dBi
Hardware parameter	**Hardware port**	UART，IIC，PWM，GPIO，ADC
	Working voltage	Outer power 3.3V，voltage range 3.0V-3.6V
	GPIO drive	Max：15ma
	Working current	Continual mode=> Average：~70mA,peak: 200mA Normal mode=> Average : ~12mA, peak: 200mA Standby：<200uA，
	Size	17.5mm*25.5mm*4mm；
Port passthrough	**Speed**	110-921600bps
	TCP Client	5
Software parameter	**Wireless internet**	STA/AP/STA+AP
	Security mechanism	WEP/WPA-PSK/WPA2-PSK
	Encryption mode	WEP64/WEP128/TKIP/AES
	Firmware update	Local port，OTA remote update
	Network protocol	IPv4, TCP/UDP/FTP/HTTP
	User configuration	SmartConfig configuration

Chapter2 M200C working principle

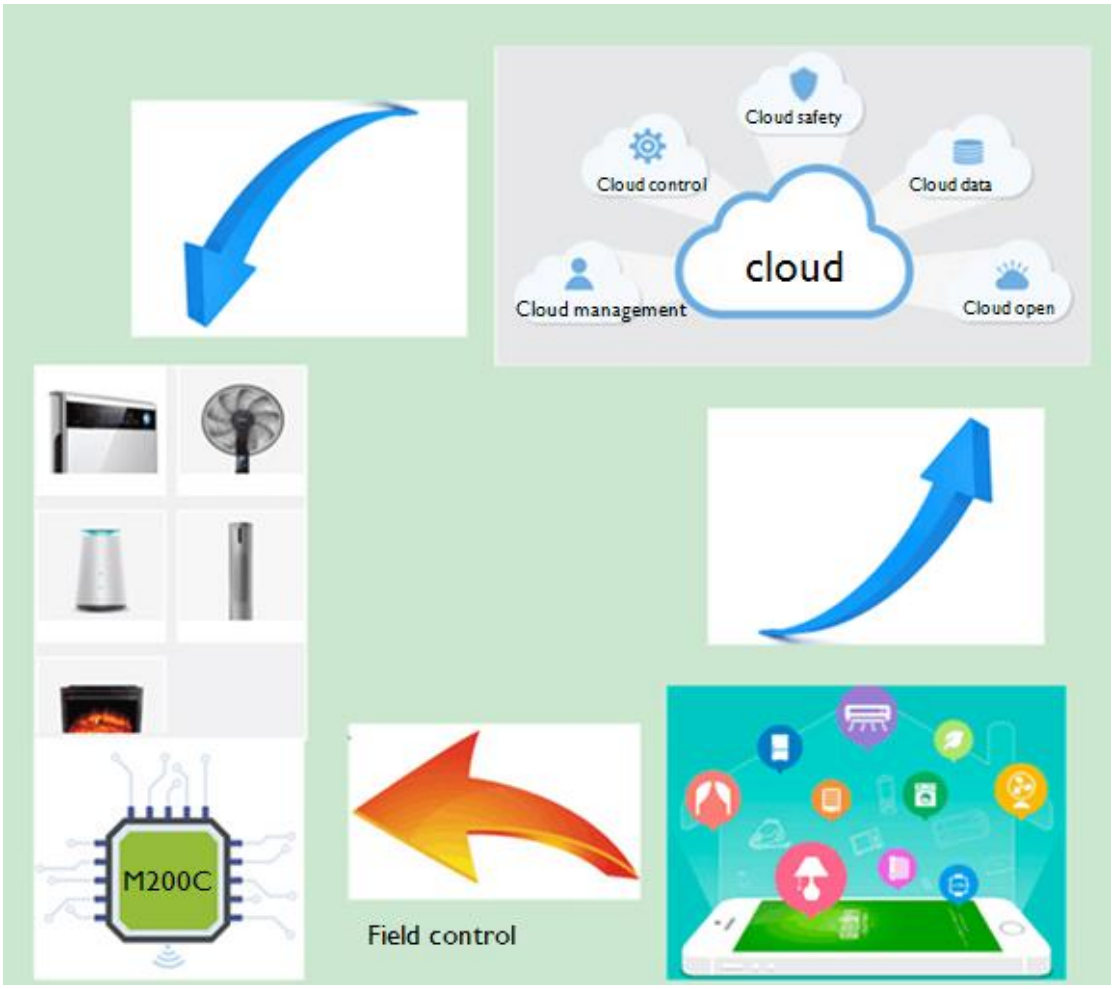
1.Hardware



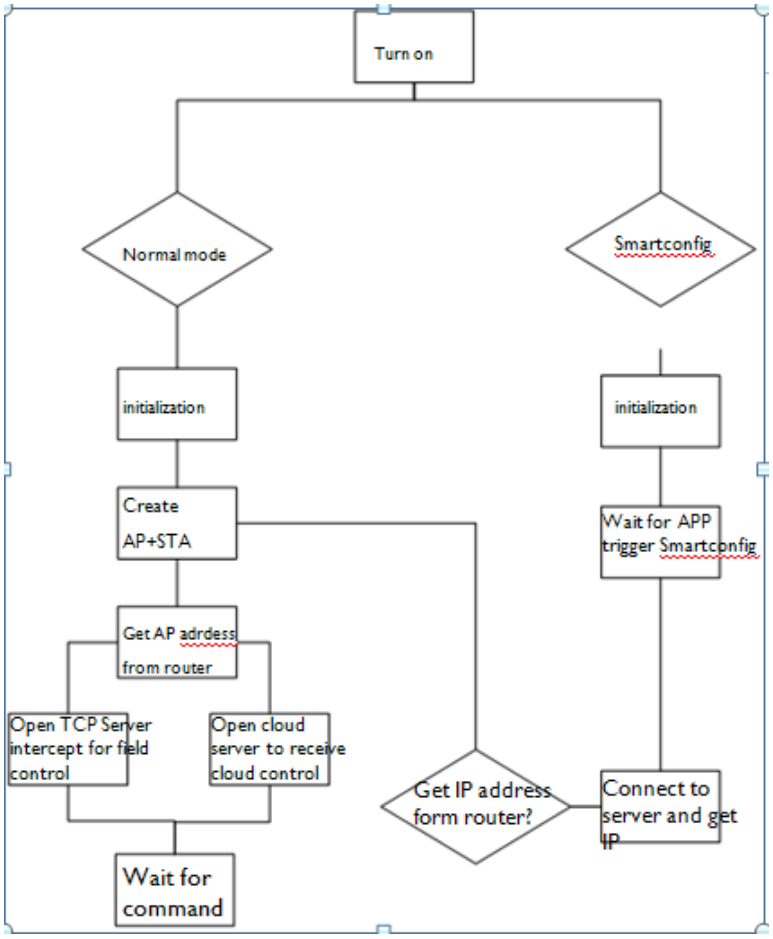
2.Software



3.Application



4. Startup process


Turn on
Normal mode
Smartconfig
initialization
initialization
Create AP+STA
Wait for APP trigger Smartconfig
Get AP adrdess from router
Open TCP Server intercept for field control
Open cloud server to receive cloud control
Get IP address form router?
Connect to server and get IP
Wait for command

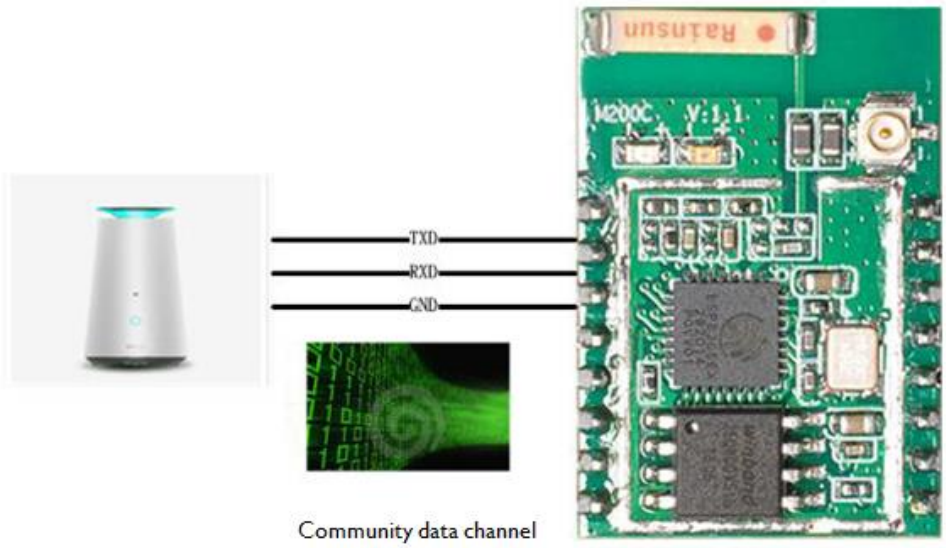
Chapter3 How to develop product based on M200C

1.Build development environment

- Prepare routers
- Prepare smart phones
- Prepare power
- Prepare M200C
- Prepare device which you want to develop with M200C
- Use portTXD,RXD,GND to connect M200C and device
- Prepare other debugging tools and software

2. Get through the links from bottom to top

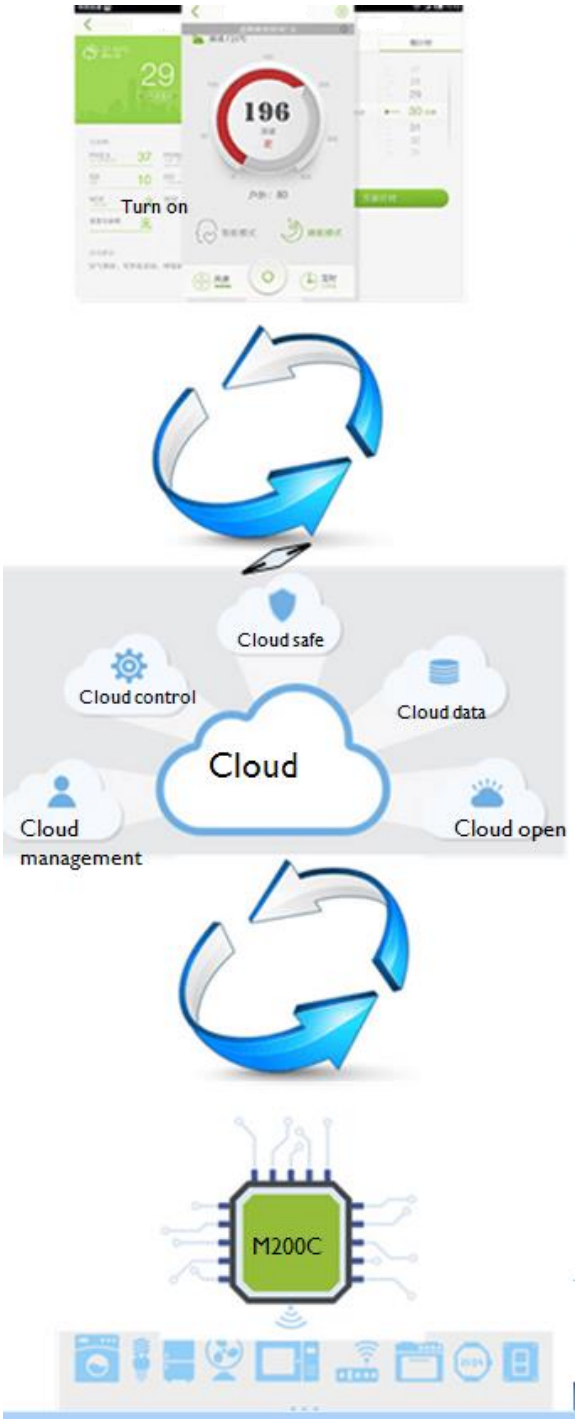
- Finish port community between M200C and device.



- Finish TCP community between M200C and cloud server.

- Finish community between cloud server and APP.

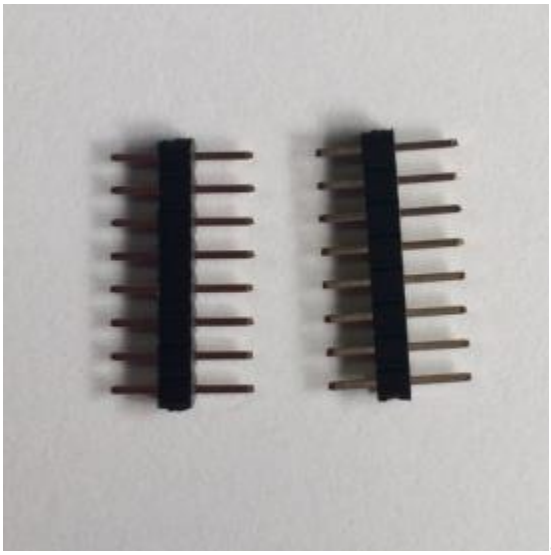
3. System operation



4. Assembly instruction

M200C can be assemblied on the main PCB by the following two ways:

1. Soldering directly on the PCB
2. Assembly by 2 row pins, just like the following picture.

 .

Warnings:
This equipment can be used in member states of the European Union once the corresponding administrative license is obtained.
Shenzhen Winext Technology Co.Ltd, as manufacturer of the product Airnode M200C, declares that the said product complies with the essential requirements established in article 3 of the Council of Europe Directive 1999/5/CE, dated 9th March, 1999.

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.

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

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimun distance 20cm between the radiator&your body . This transmitter must not be co-located or operating in conjumction with any other antenna or transmitter.

This module is intended for OEM integrator. The OEM integrator is still responsible for the FCC compliance requirement of the end product, which integrates this module

The final end product must be labeled in a visible area with the following" Contains FCC ID:2AF12000001