

# RAK ARDUINO VIDEO DEVELOPMENT BOARD USER GUIDE V1.0

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## 一 Module Introduction

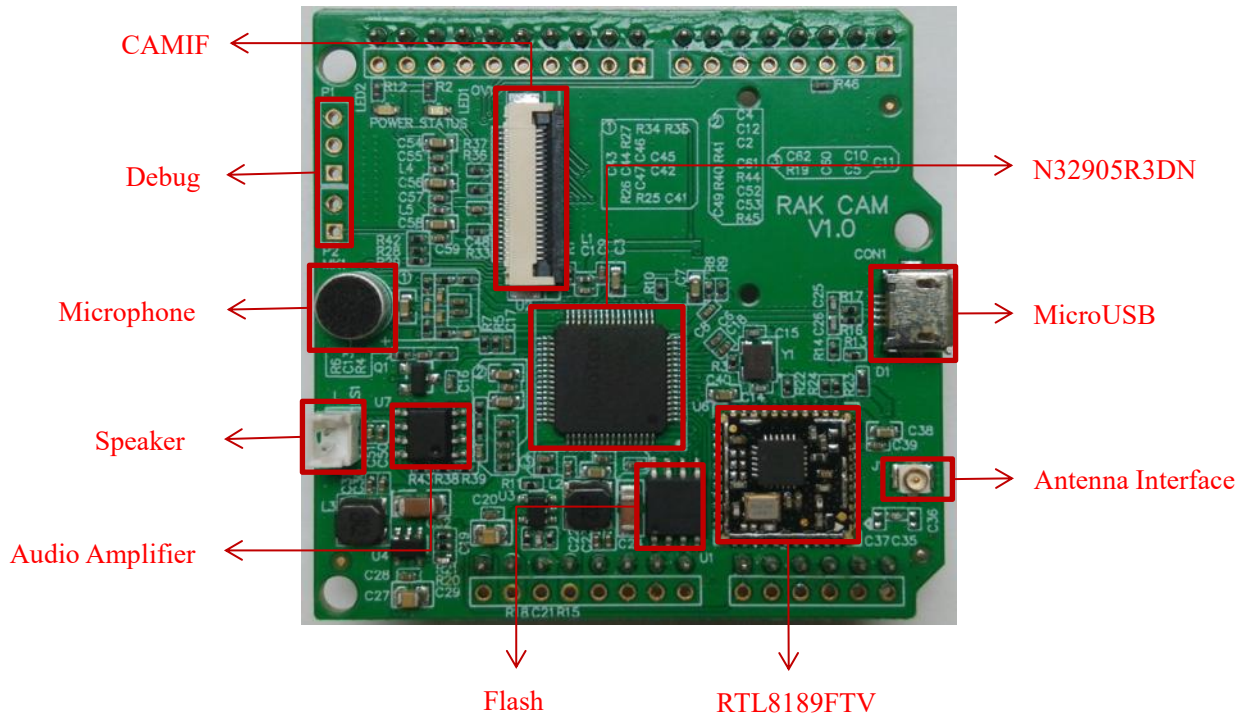
RAK CAM is a development board witch can transmit video through WIFI, it can be powered separately. In addition ,RAK CAM fully compatible with Arduino development board, so it can be used in conjunction with the Arduino development board.

This document mainly describes the hardware structure of the module and how to use the video transmission method ,so that developers can understand and be familiar with the module more quickly.



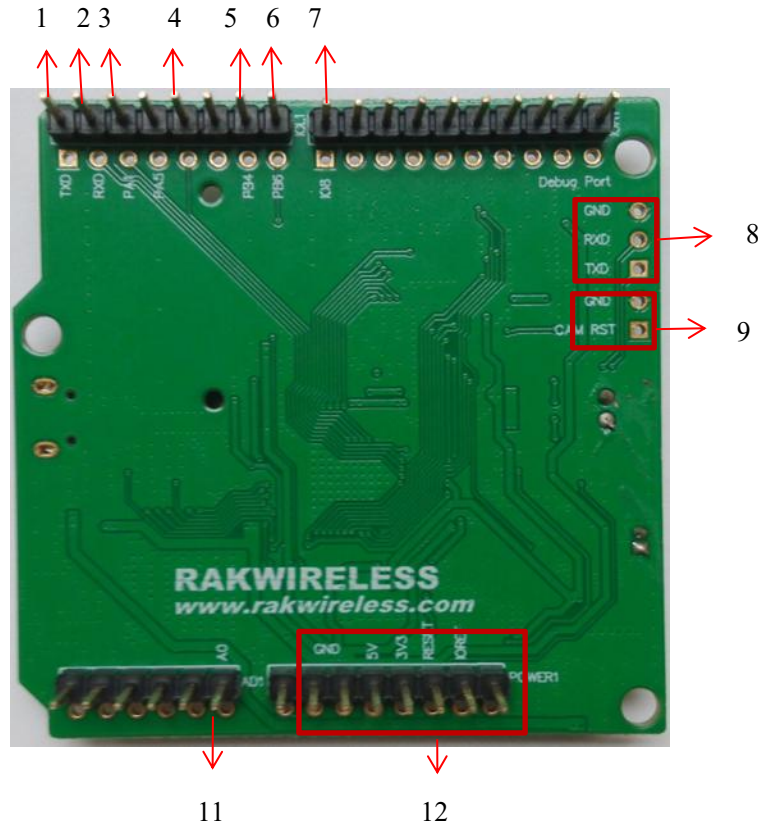
### 1 Fully Compatible With Arduino

## Hardware Introduction



1 RAK CAM Top View

## Hardware Pin Introduction



3 RAK CAM Bottom View

Number	Name	Description
1	TXD	Transparent transmission
2	RXD	
3	PA1	Gpio (For developers to use)
4	PA5	Recovery From STA To AP
5	PB4	Gpio (For developers to use)
6	PB5	Gpio (For developers to use)
7	IO8	Enable speaker
8	---	Debug port
9	---	Burn firmware, need to short circuit
10	---	Power
11	AD	ADC

## 二 compile and upgrade

### 1 Source compilation:

1 download source : [https://github.com/RAKWireless/rak\\_5280\\_arduino.git](https://github.com/RAKWireless/rak_5280_arduino.git)

Or git clone [https://github.com/RAKWireless/rak\\_5280\\_arduino.git](https://github.com/RAKWireless/rak_5280_arduino.git)

2 cd rak\_5280\_arduino

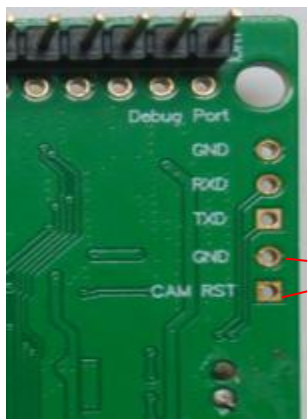
3 sudo chmod 777 ./\* -R

4 scripts/build.sh

### 2 upgrade:

1 copy output/autowriter\_gc0308 to your windows

2 enter “recover mode”



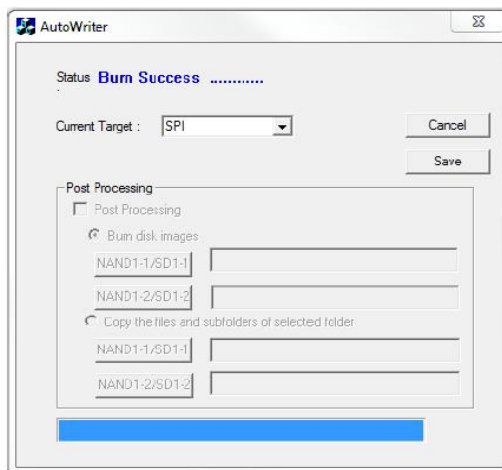
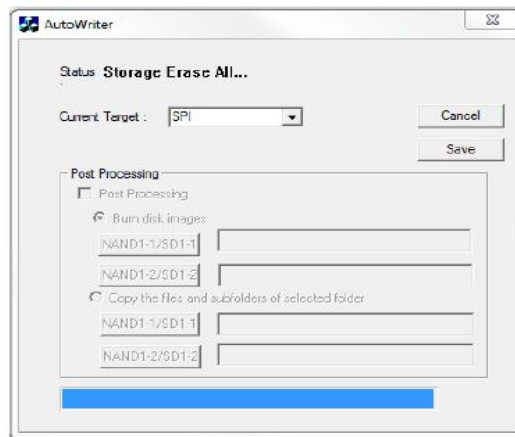
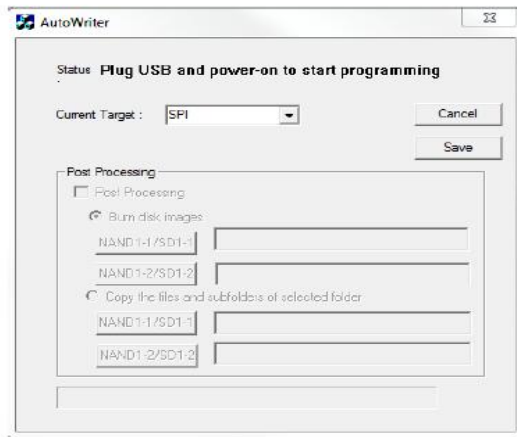
short circuit

3 connect your development board to pc with USB

4 enter autowriter\_gc0308 and execute AutoWriter.exe The ‘Current Target’ is SPI

5 it will autoburn

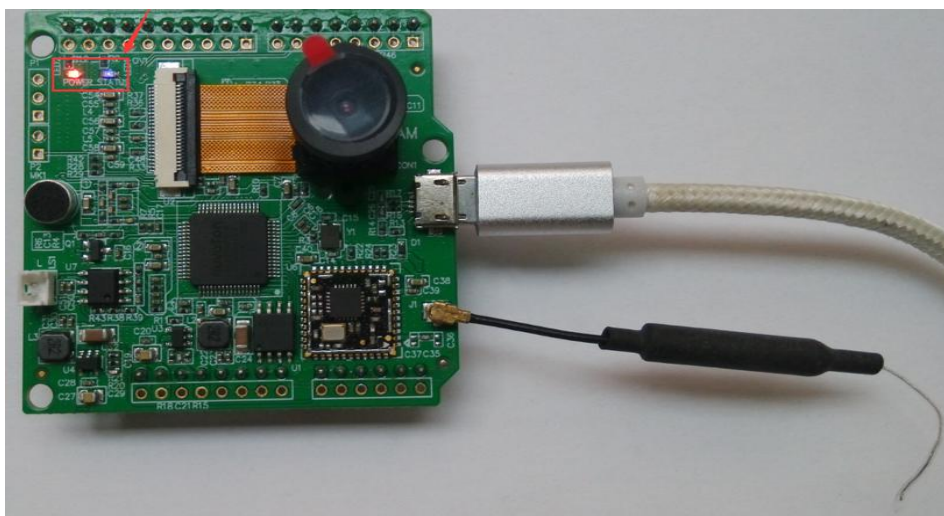
6 save and normal start



### 三 software function

the module support “rtsp ( Real Time Streaming Protocol ) ”, video ,audio ,nabto, telenet, uart transparent transmission .

Install the antenna and camera of RAK CAM development board in the corresponding position ,then start



RAK CAM Normal Start



By default, the AP starts, and ssid: Wiscam+mac address

For example :Wiscam-3a-1d-d9-7b-3a-15

Password:12345678

IP: 192.168.100.1

the video transmission format is “mpeg4” .

## (1) Local

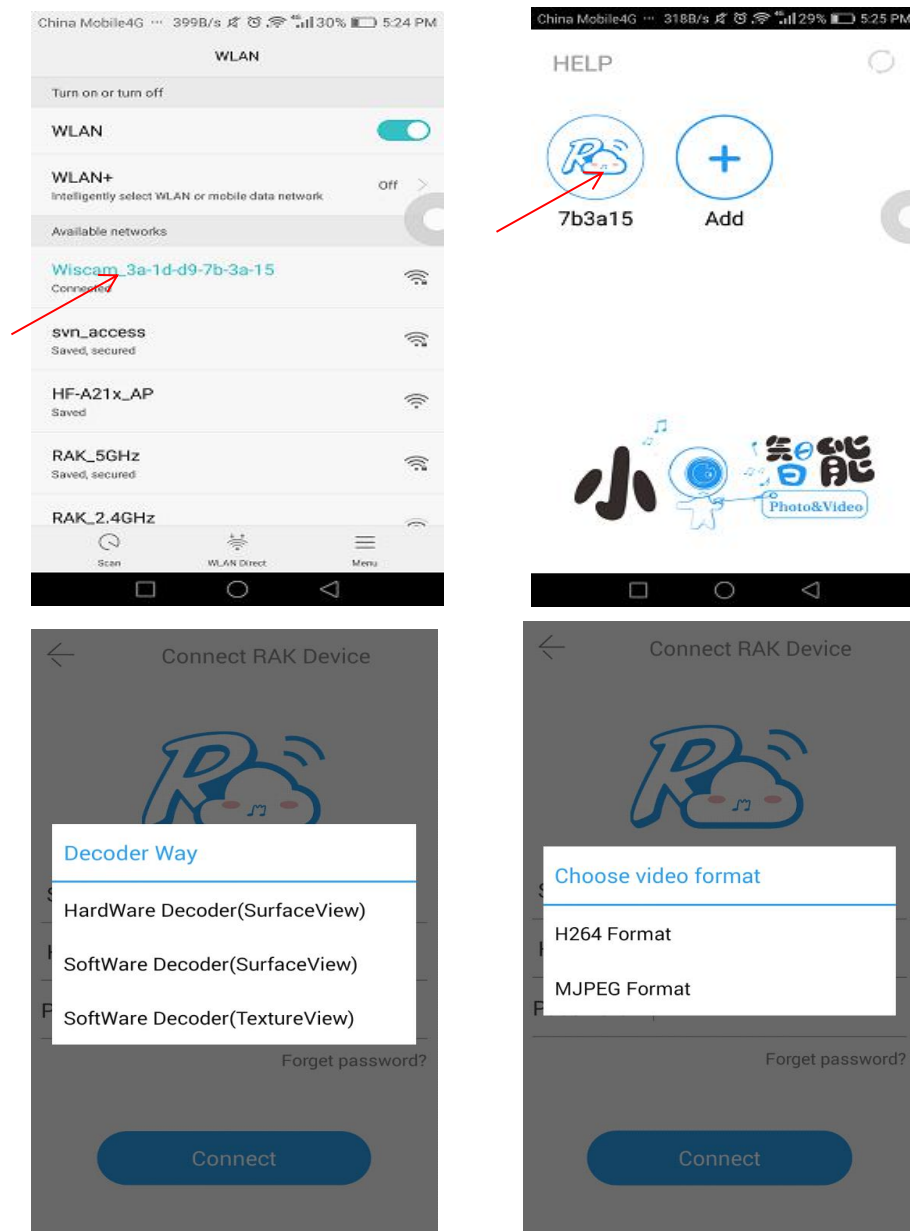
### App:

1 Install app:

IOS: you can download IOS App at the App Store “RakVideo”

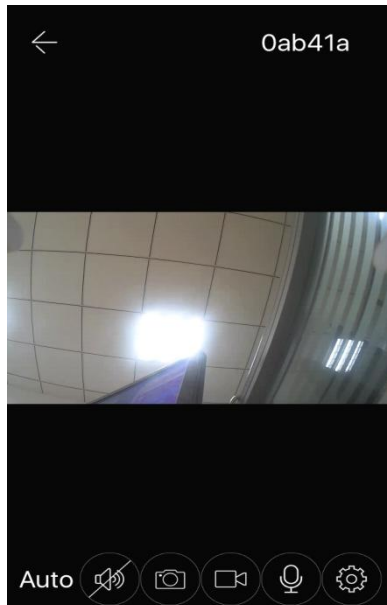
Android: url: <http://www.pgyer.com/rakvideotest>

2 Connect your phone to the module, then open your App



Click “SurfaceView” to choose decode way, and click “MJPEG Format” to choose the video transmission format.

Then input password (“**admin**” by default), and click connect you can see the video

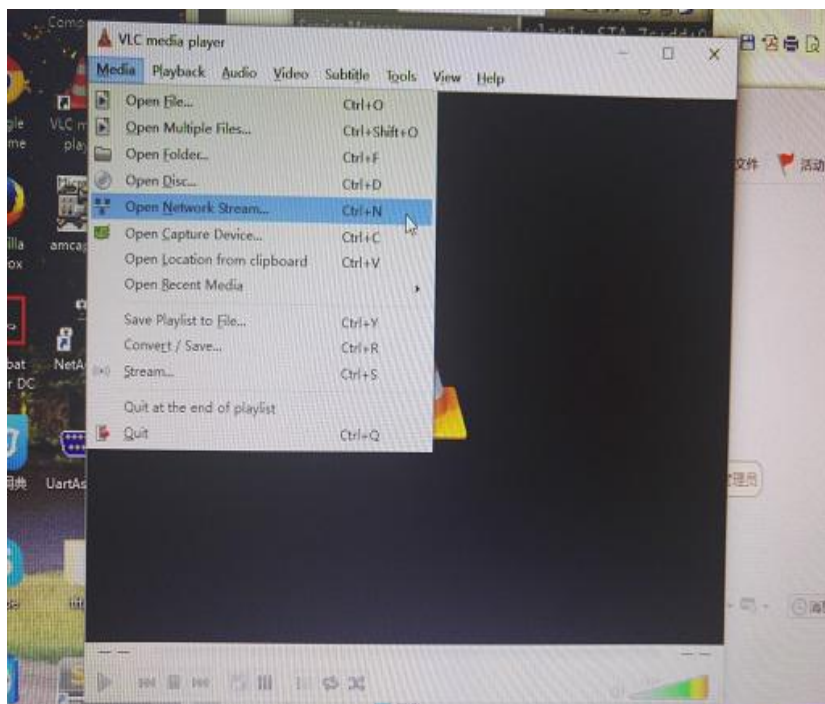


### Windows:

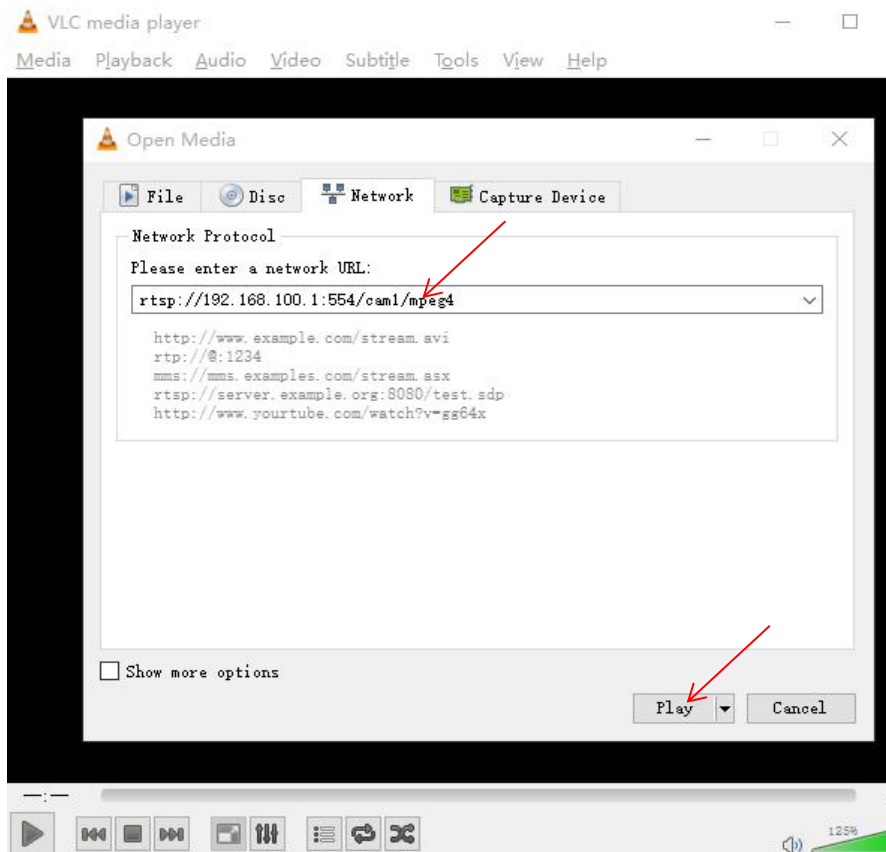
In Windows watch the video through “VLC” and “mplayer”

Input URL: `rtsp://192.168.100.1:554/cam1/mpeg4`

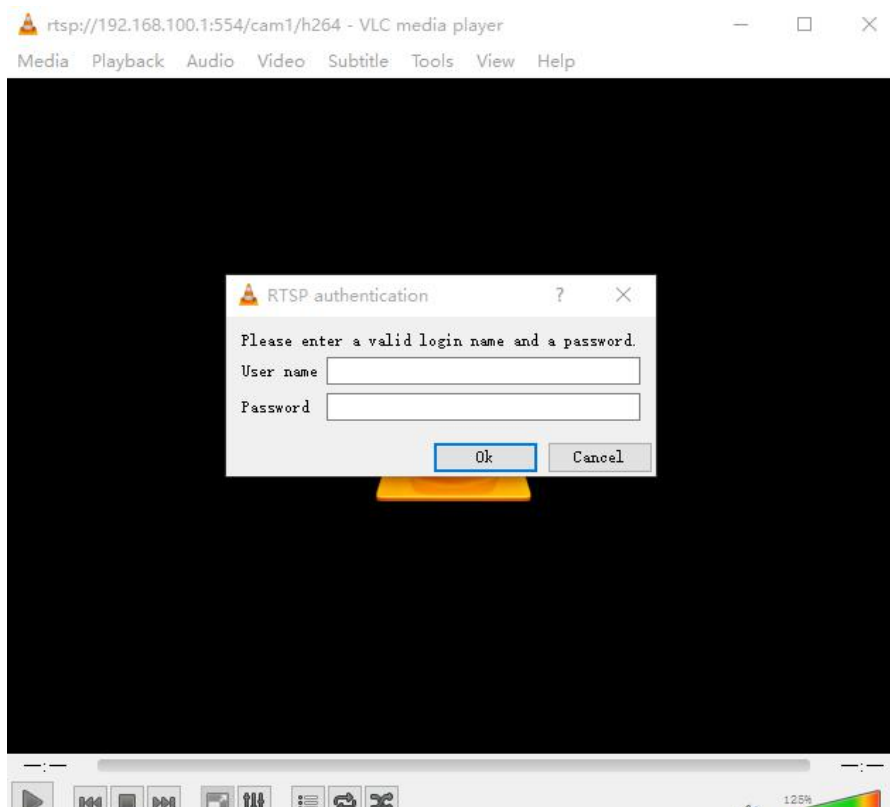
finally player



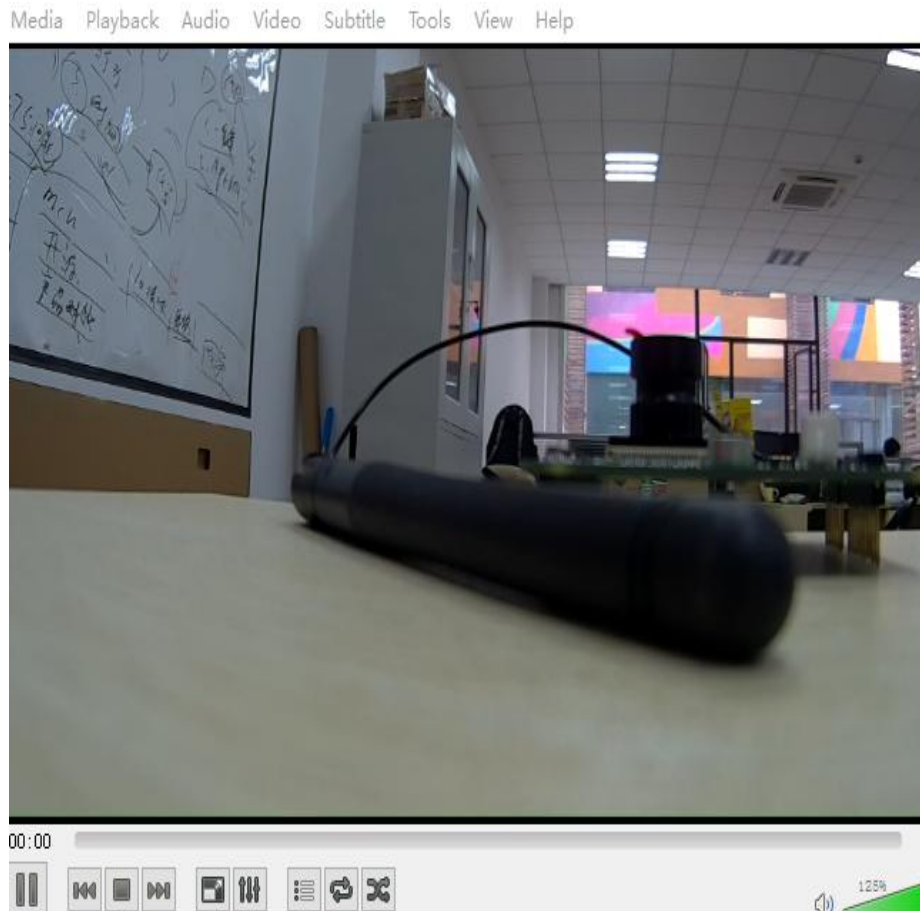




By default the user name and password is “admin”



Finally you can see the video



## (2) Remote

### Nabto

Nabto is a point-to-point remote access and control of connected device .Remote control embedded devices directly from HTML-in real-time. Or stream data directly to and from devices . Securely .No firewall hassle.

Now nabto start by default with no password, so you can change nabto id and password through “nabto” command, finally restart.

You can check the nabto id with http command :

`http://192.168.100.1/cgi-bin/param.cgi?action=list&group=nabto` Then,add

The id(lx520...) in the picture is just for test ,you can change it though http command or change /mnt/nand1-2/etc/nabtonat\_config in your terminal(Program Guide).

Exactly id:

**nabto\_id:**wt1ttv.2.us.ytong.rakwireless.com

**Nabto\_key:**5c495db1303c6db812c0e0aa0c822505

**If the ID has any problem please contact this email <kevin.lee@rakwireless.com> to get new ID**

**http command:**

`http://192.168.100.1/cgi-bin/param.cgi?action=update&group=nabto&nabto_id={}&Nabto_key={}`

China Mobile4G 249B/s 70% 4:46 PM

HELP



8000a9



Add



China Mobile4G 93B/s 70% 4:54 PM

← Add remote RAK Device

Add remote RAK Device

1. Input RAK Device remote id
2. Click 'Add' button to add remote RAK Device

Check with http command

lx520.7b3a15.p2p.rakwireless.-com

rak

Add



China Mobile4G 223B/s 70% 4:46 PM



Add RAK Device

Local RAK Device



Configure local RAK Device connect to the network that the phone had connected

Remote RAK Device



Monitor RAK Device in remote way by RAK Device remote id



China Mobile4G 296B/s 69% 4:55 PM

HELP

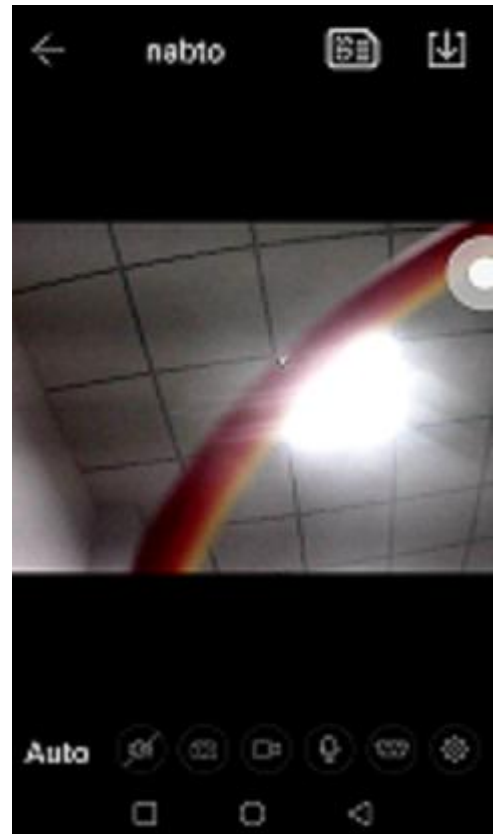
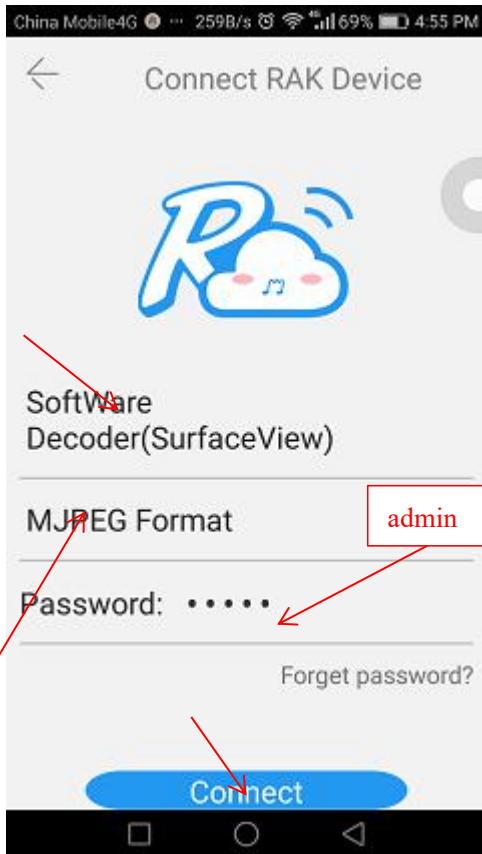


rak



Add





## (5) Uvc module:

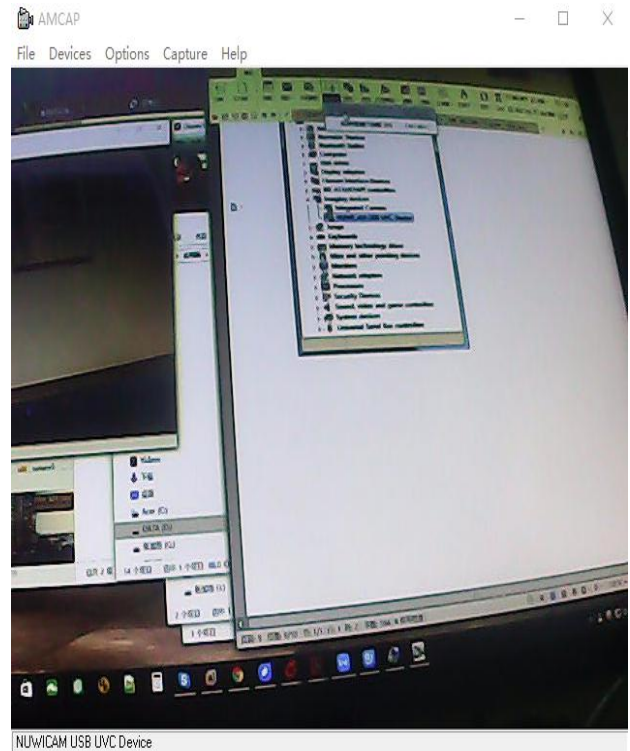
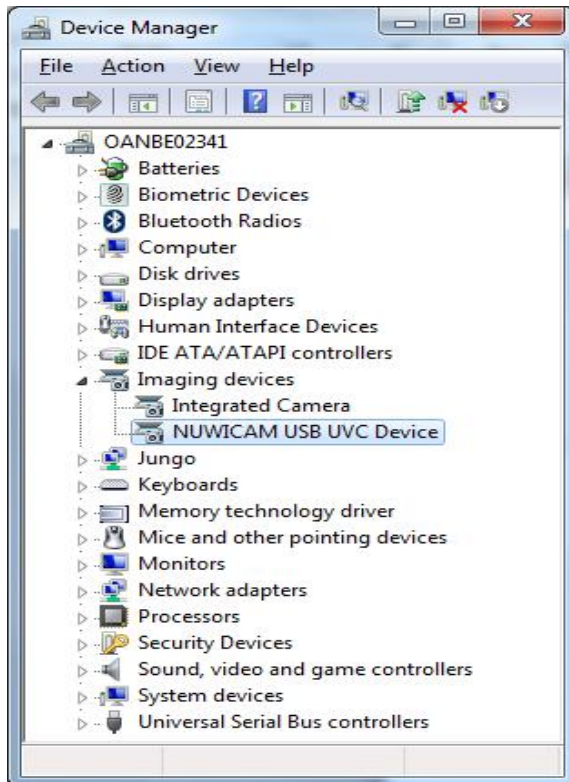
The module also provides a simple USB video class(UVC) firmware

1 plug in USB lines into “USB” port ,connect your pc

2 restart your board

3 windows will help to install UVC camera automatically .After UVC driver installation is done, you can see a ‘NUWICAM USB UVC Device’ in device manager window .

4 After that ,open UVC capture utility to test UVC function. For example “WebcamViewer” or “AMCap”



## 四 Modification Record

Version	Author	Time	Modify The Content
V1.0	Wentao.Sun	2016/11/16	Create the Document