
# An introduction to cubieboard

# About me

黄祖奔 (Benn Huang)

From cubietech


benn@cubietech.com

# About cubietech

- The company behind cubieboard
- Founded in 2013.3.25
- Based in Zhuhai
- Embedded devices manufacture
- Community driven
- Global small company

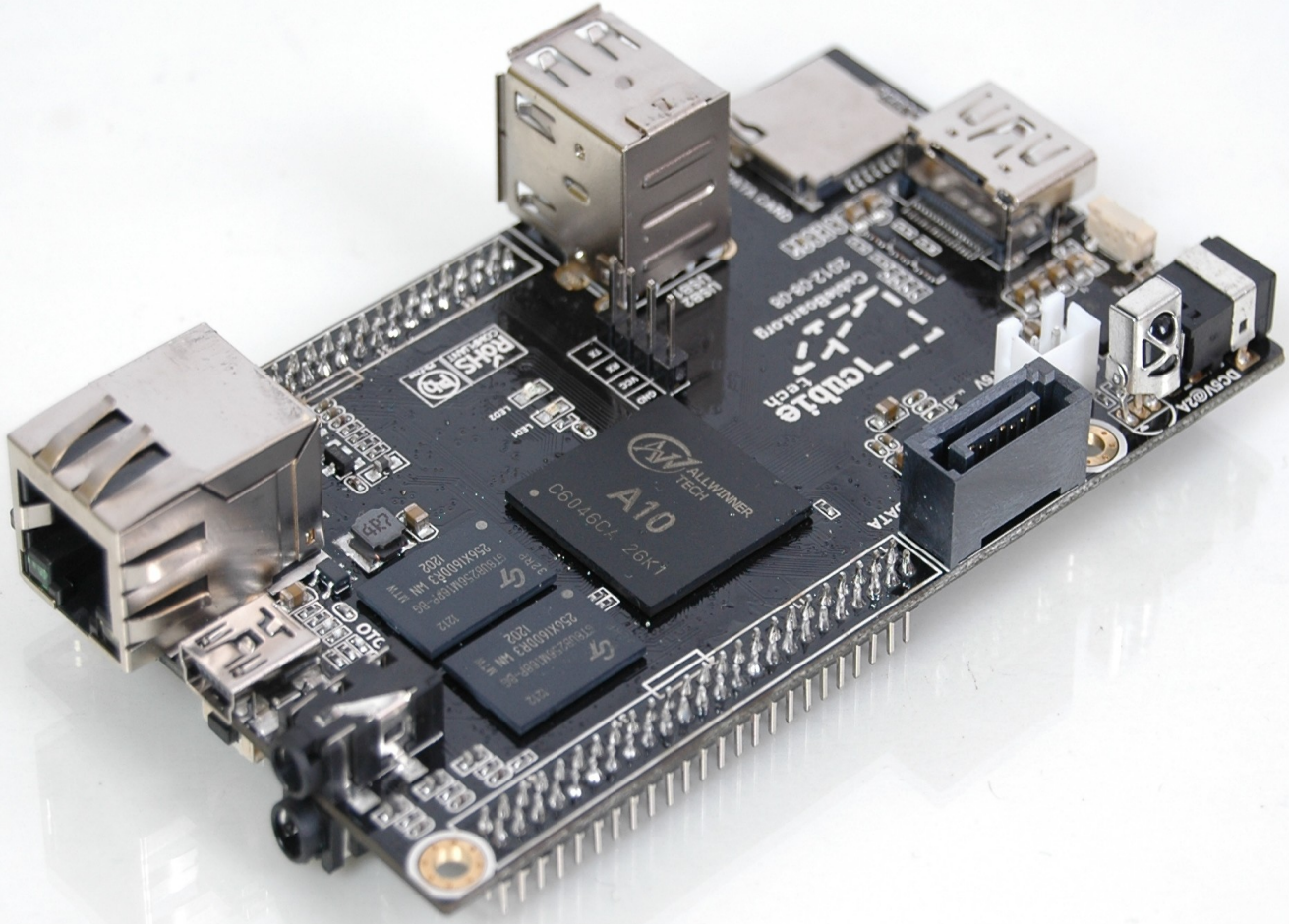
# Hardware Specifications

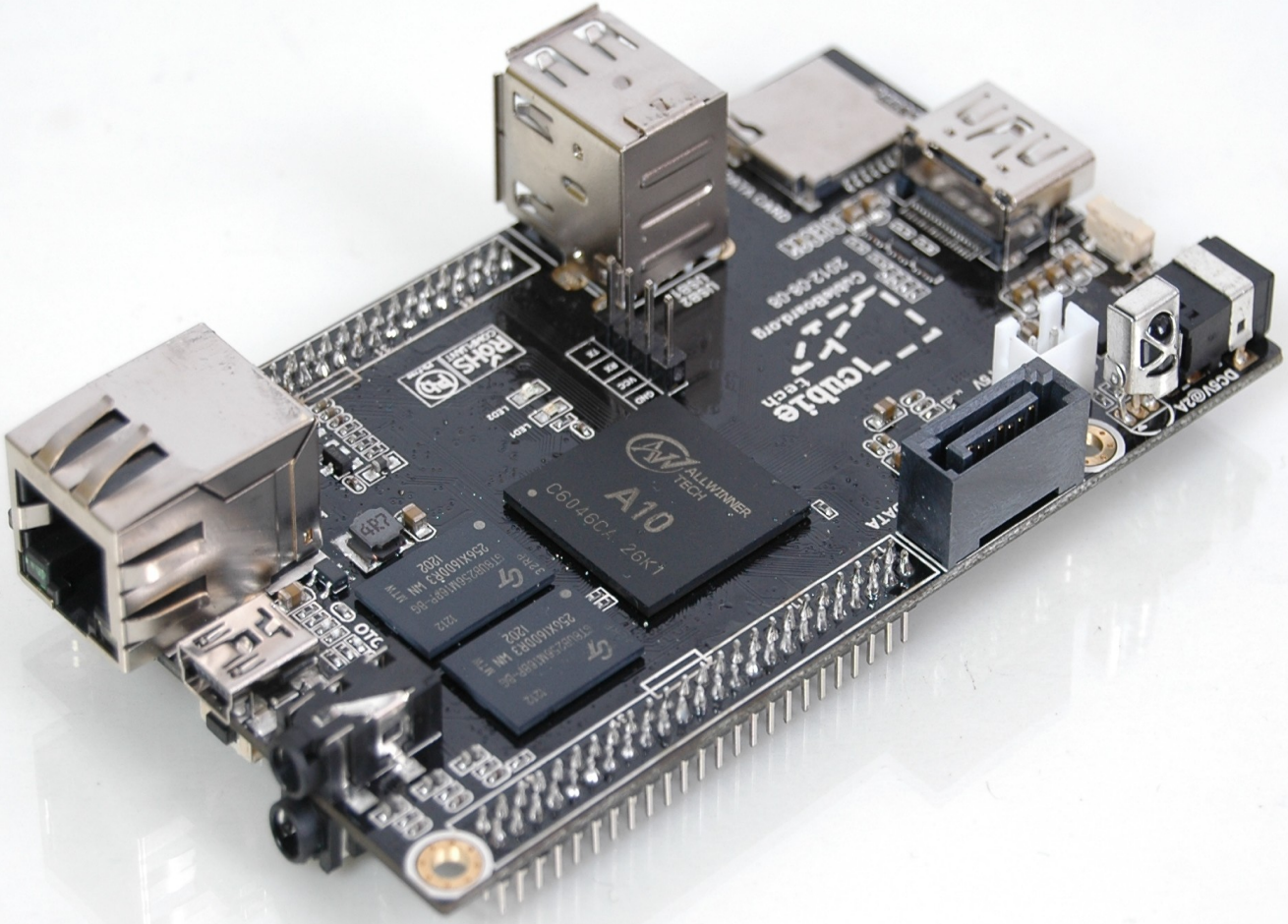
- CPU dynamically frequency scaling (60MHz~1GHz)
- 1 or 2 cores CPU optional
- 1GB DDR3
- 4GB Nand Flash
- 2D/3D GPU
- 2160p HD Video Processor
- I2C, 96 GPIOs, TWM, 2.5' SATA, Ethernet, ...

# Software Specifications

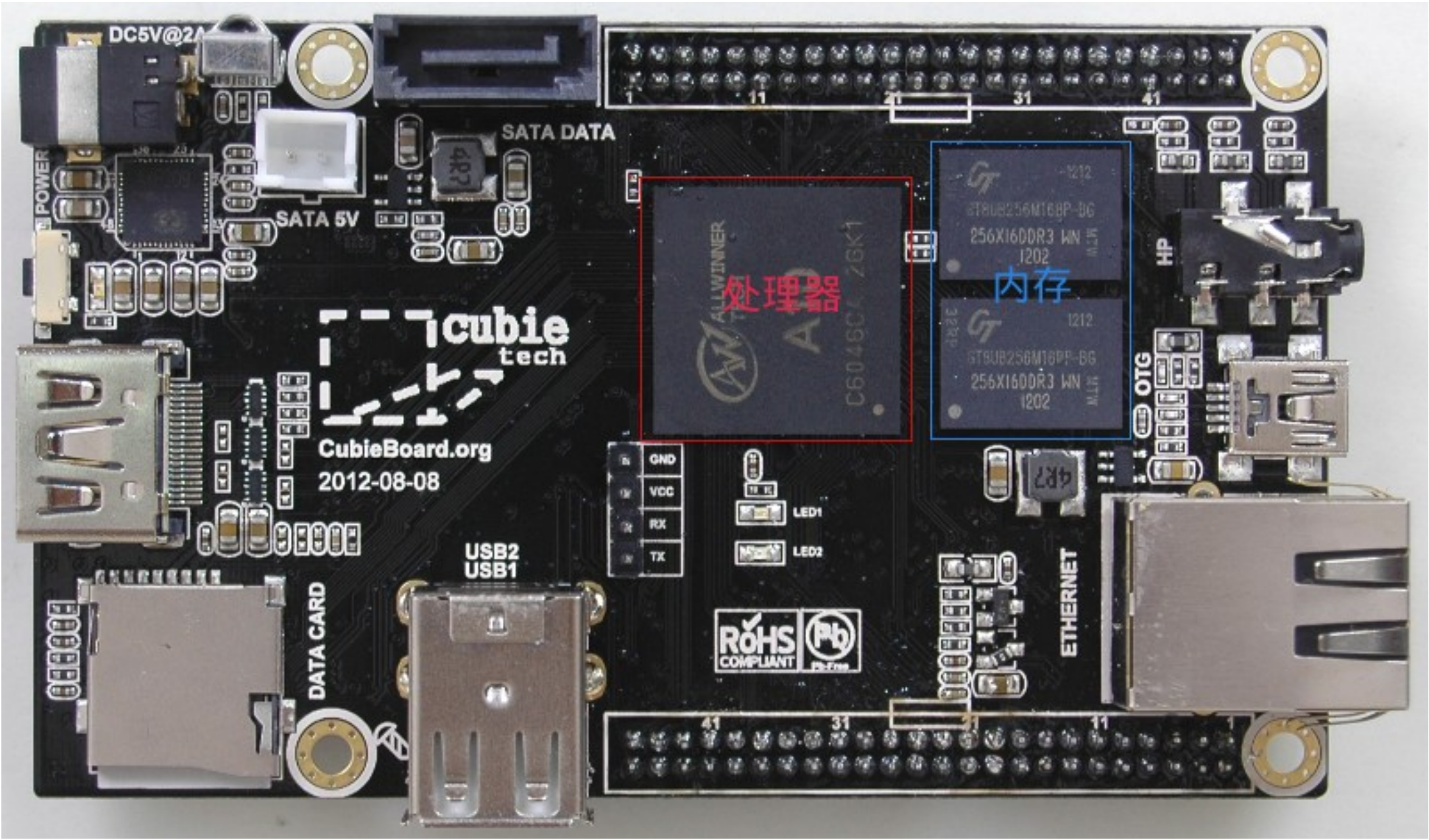
- Preinstall android 4.x
- Support lubunut 12.04 destkop, ubuntu 13.03 server

  http://linux-sunxi.org/Install_Ubuntu_Linux_for_Cubieboard
- Support Fedora 18
- Support Kali Linux
- Support Debian Linux
- ...


ALLWINNER TECH
A10
C6046C4 26K1
OTG
DC5V/2A


ALLWINNER
TECH
A10
C6046CA 26K1
DC5V@2A
SATA

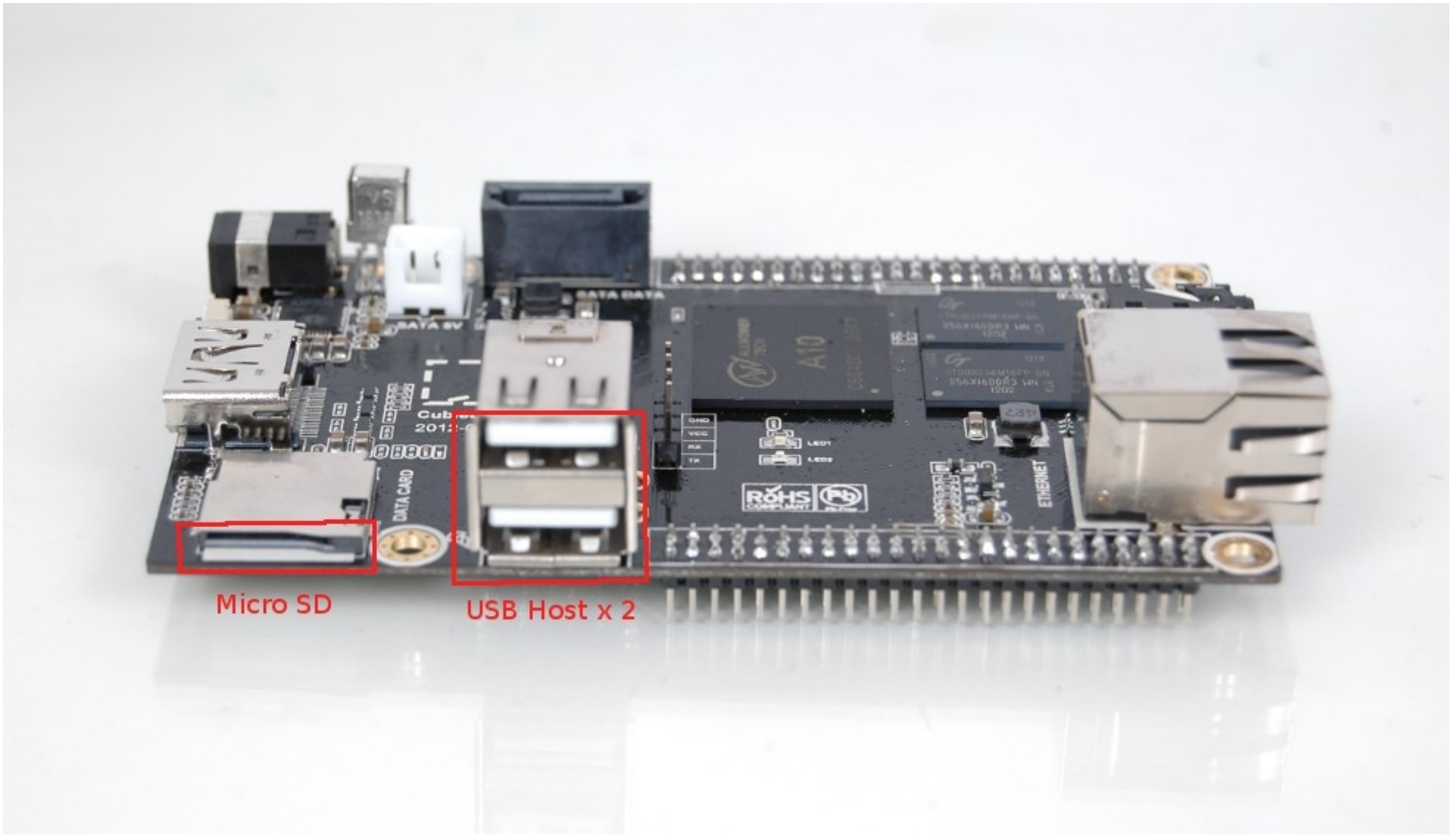
# Quick overview - top



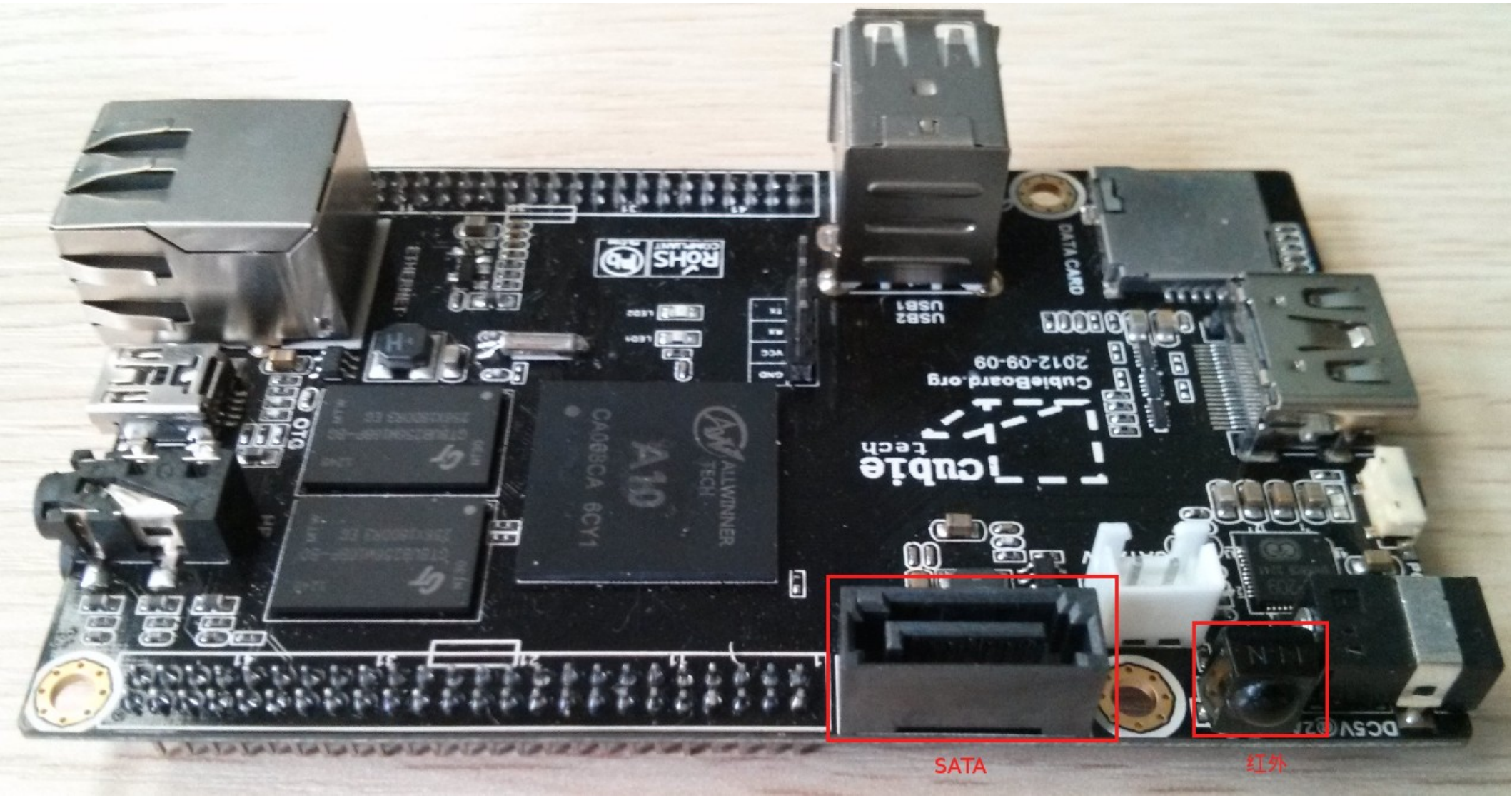
# Quick overview - HDMI

# Quick overview - HDMI

# Quick overview – USB host



# Quick overview - SATA



# What needed

- Power adapter
- Power cable

- HDMI cable
- HDMI monitor/TV


- USB mouse & keyboard

# Prepare the uSD card

- 1. Download the tool

  Window – Win32DiskImager

  http://sourceforge.net/projects/win32diskimager/

  Linux – dd

- 2. Download the image

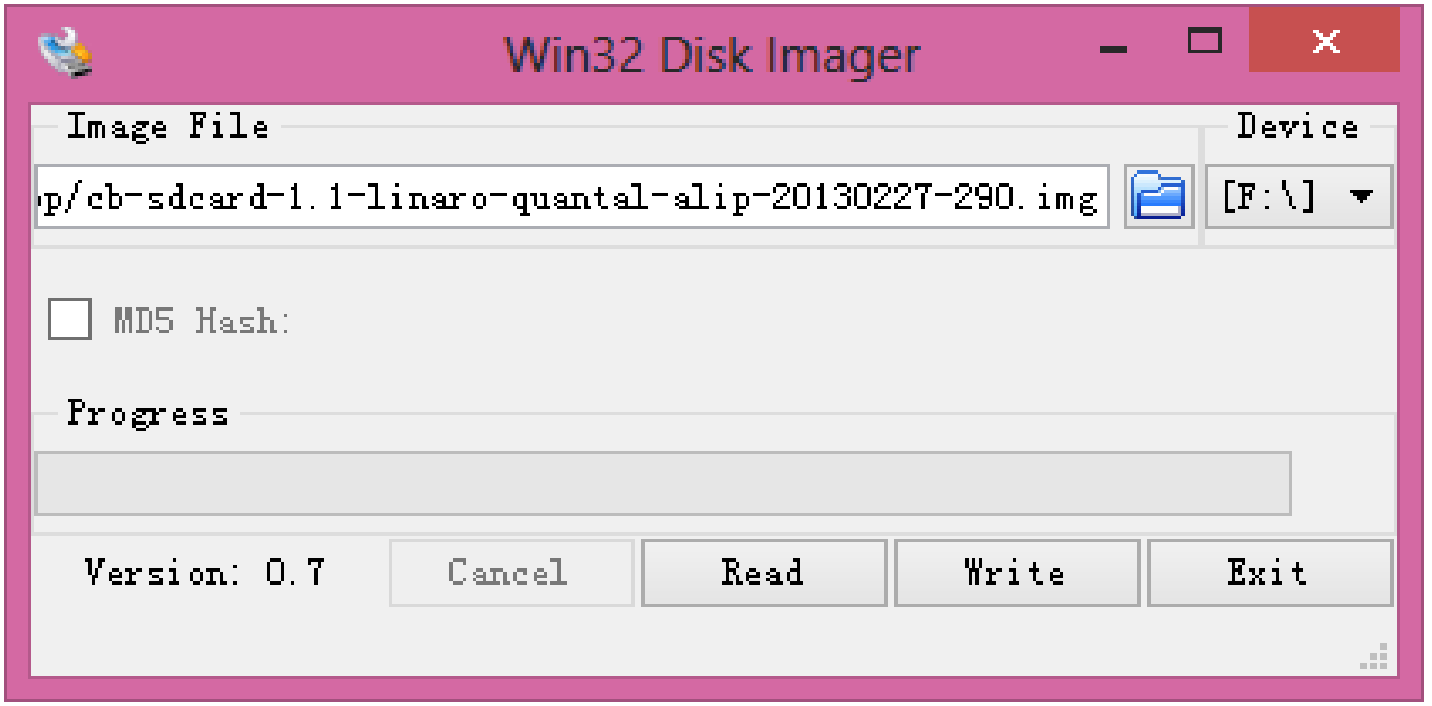
  Lubuntu – ubuntu with lxde desktop

http://dl.cubieboard.org/software/ubuntu/cb-sdcard-1.1-linaro-quantal-alip-20130227-290.img.tgz

# Prepare the uSD card

- Insert the uSD card to card reader and connect to PC
- Run Image Writer
- Choose the image and disk and click Write
- Done

# Prepare the uSD card

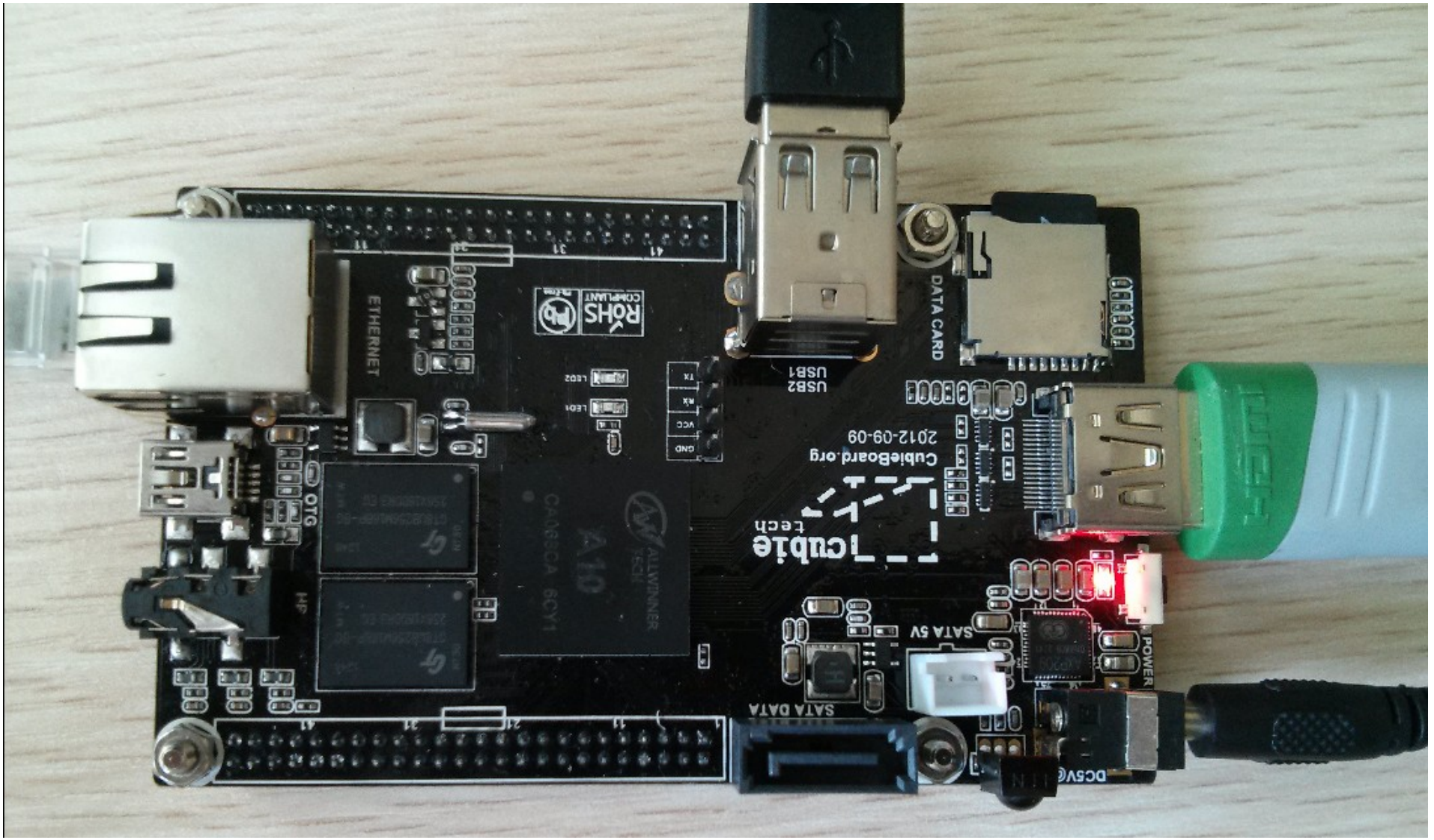


# Power on

- Insert the uSD card to the cubie
- Connect HDMI/Ethernet cable
- Connect USB mouse/keyboard
- Plug in the power cable

  Power red led on, cubie starts booting...

# Power on

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# Status leds

Default configuration of two leds

- Blue: heart beat
- Green: uSD card reading/writing

More information:

http://linux-sunxi.org/Cubieboard/Programming/StatusLEDs

# connect to PC


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# Lubuntu Desktop

# Applications

- Internet browsing – Chromium
- File manager – Pacman FM
- Office – Libreoffice
- PDF reader - Evince
- Terminal – Lxterminal

  ……

# What's else?

- Use cubie as web server
- Use cubie as android tv
- Use cubie as NAS
- Use cubie as...

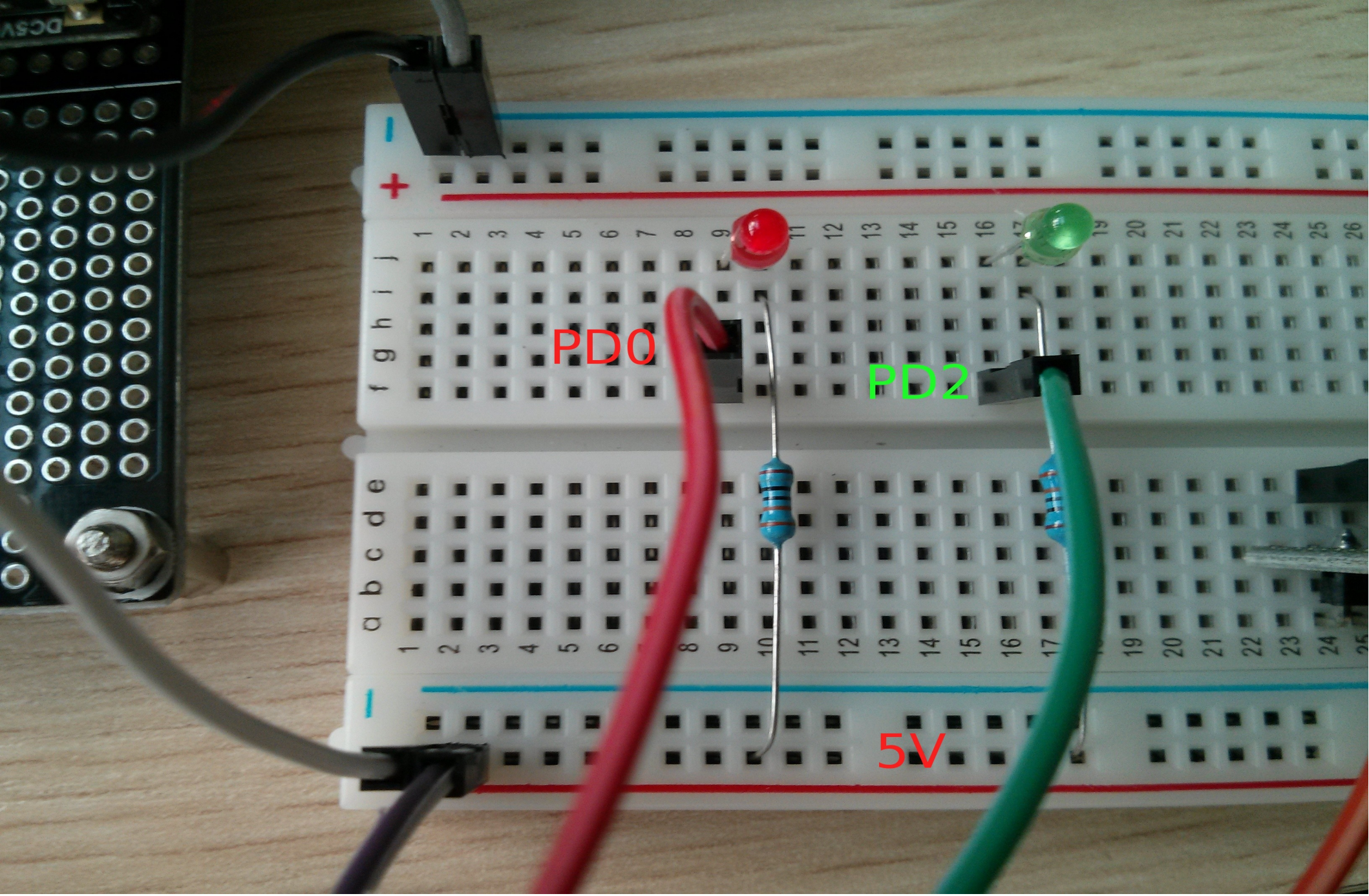
# Example 1 – GPIO

- sudo apt-get install python-dev
- wget http://dl.linux-sunxi.org/users/tom/pySUNXI-0.1.12.tar.gz
- tar zxf pySUNXI-0.1.12.tar.gz
- sudo python setup.py install

# Wrap the breadboard

| U14 (Next to SATA connector) | | | |
|---|---|---|---|
| LCD | | | |
| 1 | PD0 (LCDD0/LVDSP0) | 2 | *Ground* |
| 3 | PD2 (LCDD2/LVDS0P1) | 4 | PD1 (LCDD1/LVDS0N0) |
| 5 | PD4 (LCDD4/LNVS0P2) | 6 | PD3 (LCDD3/LVDS0N1) |
| 7 | PD6 (LCDD6/LVDS0PC) | 8 | PD5 (LCDD5/LVDS0N2) |
| 9 | *Ground* | 10 | PD7 (LCDD7/LVDS0NC) |

| | | | |
|---|---|---|---|
| 41 | SPDIF | 42 | *Ground* |
| 43 | VCC-5V | 44 | 3.3V (*nc* in 2012-08-08) |


PD0
PD2
5V

# Code – blink leds

```
#!/usr/bin/env python


import SUNXI_GPIO as GPIO
import time


RED_LED = GPIO.PD0


GPIO.init()
GPIO.setcfg(RED_LED, GPIO.OUT)
```

# Gmail notifier

- sudo apt-get install python-pip
- sudo pip install feedparser

# Code - Gmail notifier

```
#!/usr/bin/env python

import SUNXI_GPIO as GPIO, feedparser, time

DEBUG = 1

USERNAME = "tomcubie"      # just the part before the @ sign,
add yours here

PASSWORD = "cubieboard"

GREEN_LED = GPIO.PD0

RED_LED = GPIO.PD2

GPIO.init()

GPIO.setcfg(GREEN_LED, GPIO.OUT)

GPIO.setcfg(RED_LED, GPIO.OUT)


while True:
```



```
        newmails = int(feedparser.parse("https://" + USERNAME +
":" + PASSWORD +"@mail.google.com/gmail/feed/atom")["feed"]
```

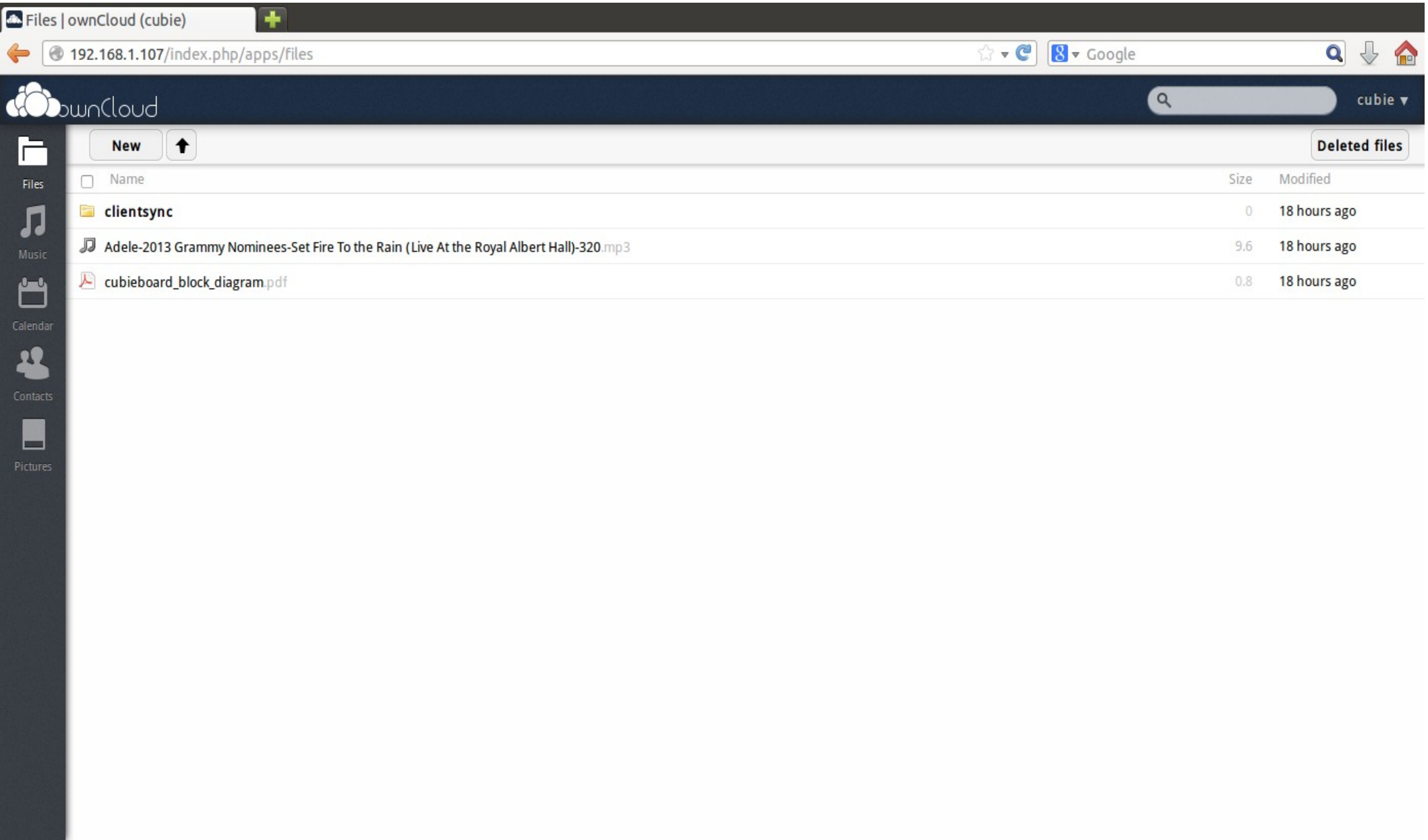
# Example 2 – Owncloud on cubie

- sudo apt-get install apache2 php5 php5-gd php-xml-parser php5-intl
- sudo apt-get install php5-sqlite php5-mysql smbclient curl libcurl3 php5-curl
- wget http://download.owncloud.org/community/owncloud-5.0.6.tar.bz2

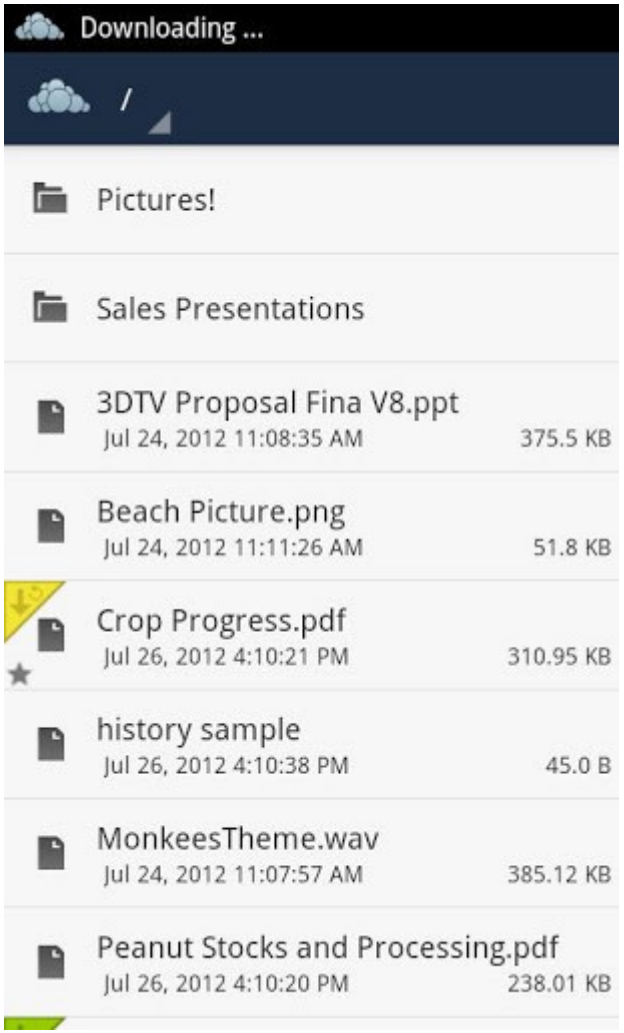
# Install owncloud

- tar jxf owncloud-5.0.6.tar.bz2
- sudo rm /var/www/index.html
- sudo mv owncloud/* /var/www/
- sudo chown -R www-data:www-data /var/www
- Open web browser, point to cubie IP

# Owncloud


Files | ownCloud (cubie)
192.168.1.107/index.php/apps/files
Google
ownCloud
cubie
Files
Music
Calendar
Contacts
Pictures
New
Deleted files
Name
Size
Modified
clientsync
0
18 hours ago
Adele-2013 Grammy Nominees-Set Fire To the Rain (Live At the Royal Albert Hall)-320.mp3
9.6
18 hours ago
cubieboard_block_diagram.pdf
0.8
18 hours ago

# Owncloud android client



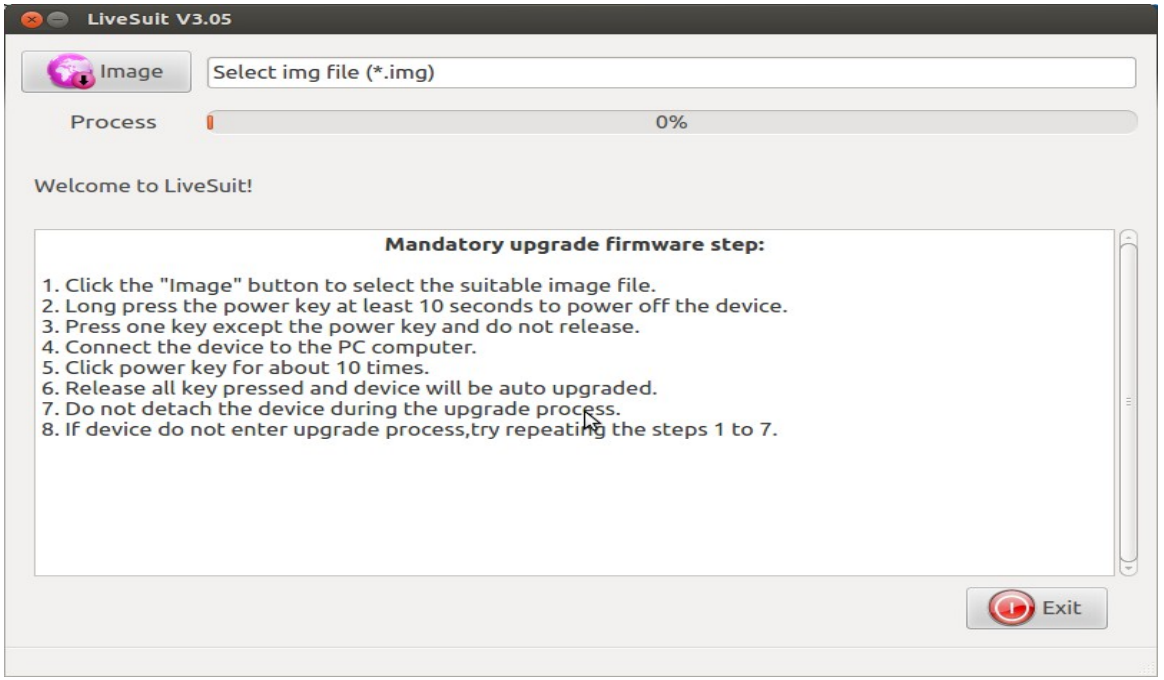


# Example 3 – 5min install ubuntu 12.04 on Cubieboard

- Download ubunu images

  http://linux-sunxi.org/Install_Ubuntu_Linux_for_Cubieboard

- Start Livesuit, and select the image

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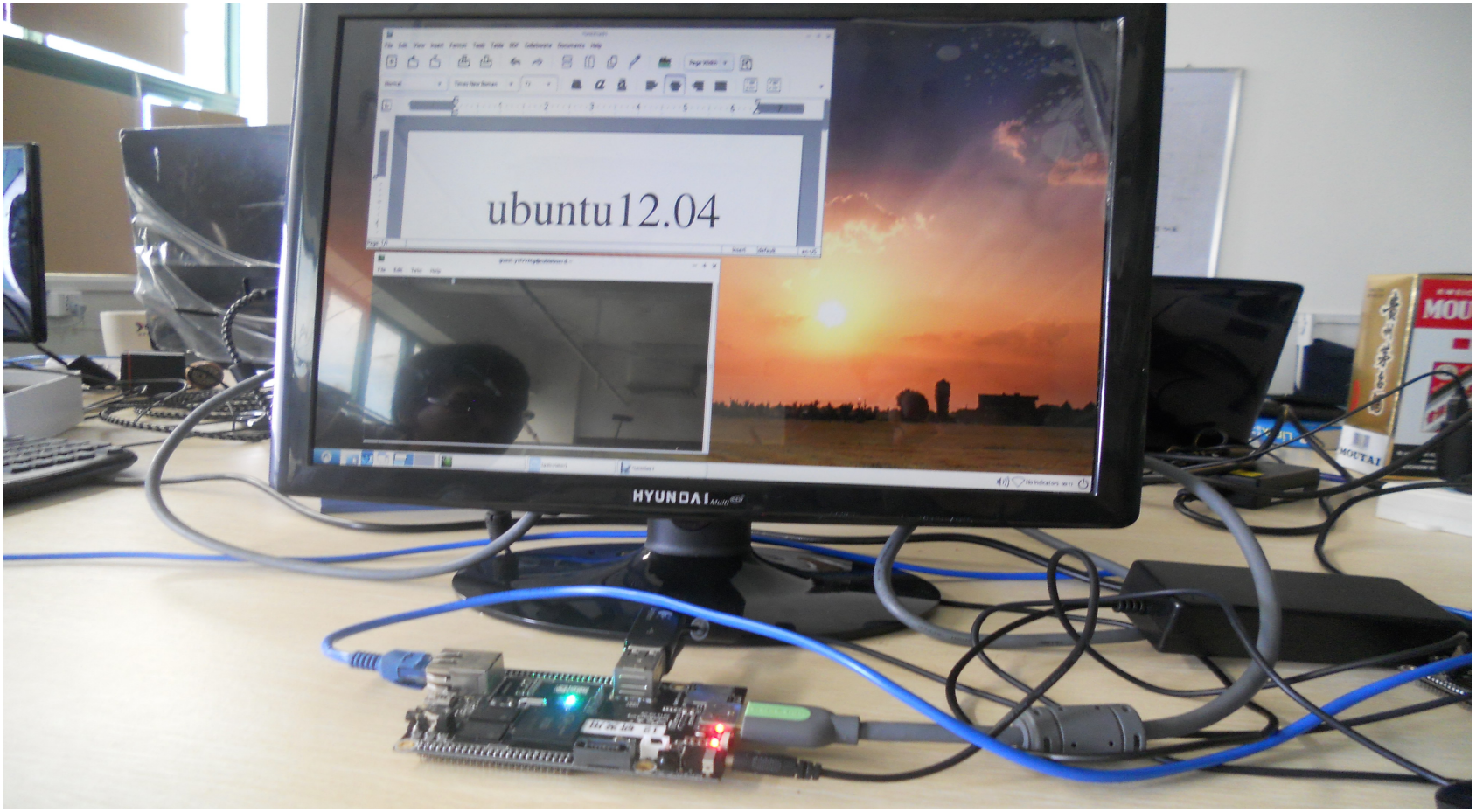
# Example 3 – 5min install ubuntu 12.04 on Cubieboard




Cubieboard.org

# Community

- Chinese Forum: cn.cubieboard.org
- QQ group: 92017963
- Google group: cubieboard
- IRC channel: #cubieboard
- G+ community: cubieboard

# Documents

- http://linux-sunxi.org/Cubieboard
- https://github.com/cubiebook/cubiebook

# New more powerful board is coming!!

Hardware Features ：

1、 AllWinnerTech SOC A20 ， ARM® Cortex™-A7 **Dual-Core** ， ARM® Mali400 MP2 Complies with OpenGL ES 2.0/1.1

2、 1GB/**2GB** DDR3@480MHz

3、 **HDMI&VGA** 1080P display output on-board

4、 10M/100M/**1000Mbps Ethernet**

5、 **Wifi+BT wireless** connection with antenna on-board

6、 **SATA** 2.0 interface support 2.5’ HDD ， (for 3.5’ HDD, only need another 12V power input)

7、 Memery solution ： NAND+MicroSD or TSD+ MicroSD or 2*MicroSD

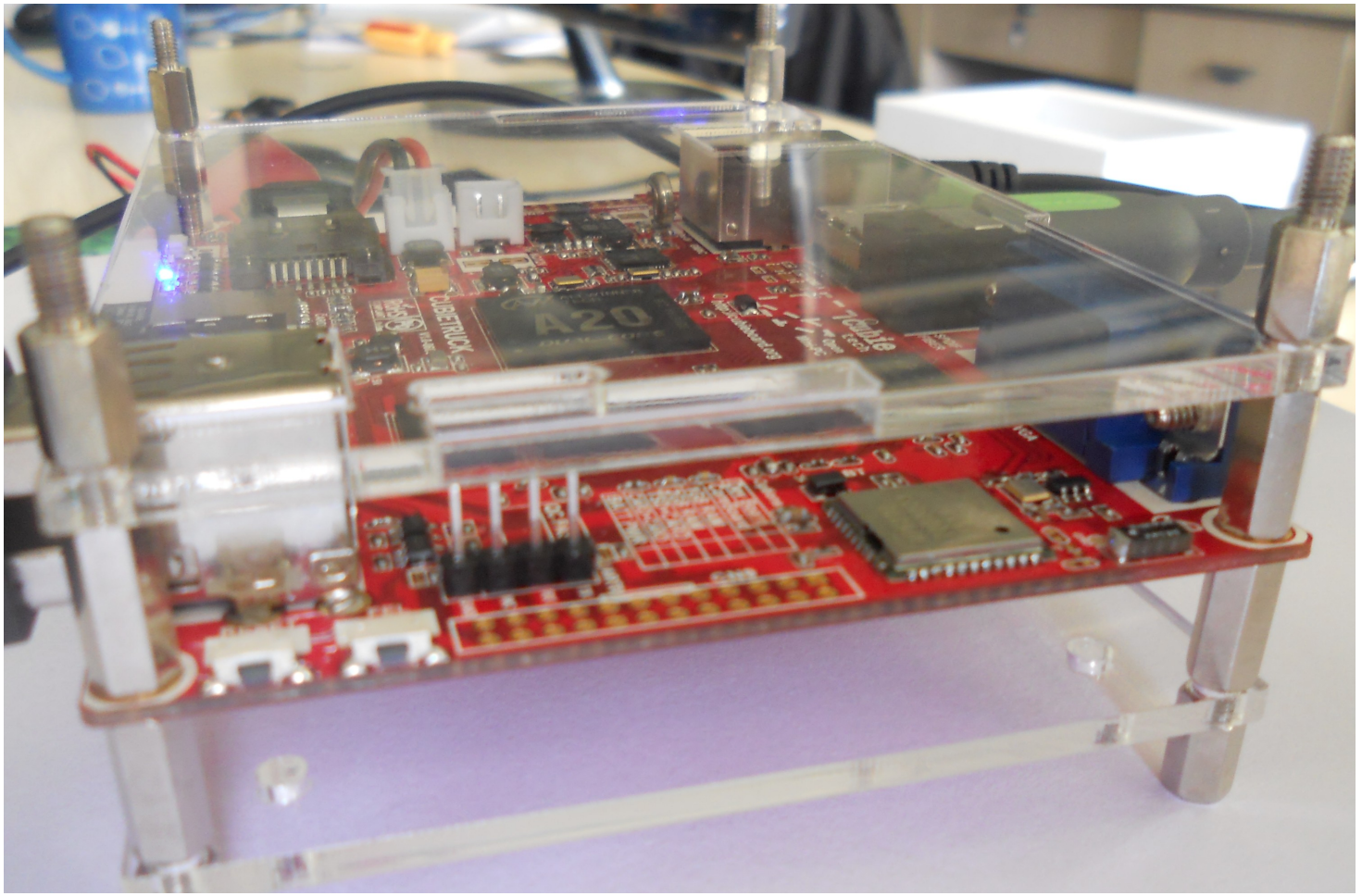
8、 2 x USB HOST ， 1 x OTG ， 1 x SPDIF ， 1 x IR ， 4 x LEDs ， 1 Headphone ， 3 x Keys

9、 Power ： DC5V @ 2.5A with HDD ， **support Li-battery & RTC**

10、 **54 extended pins** including I2S, I2C, SPI, CVBS, LRADC x2,UART, PS2, PWMx2, TS/CSI, IRDA, LINEIN&FMIN&MICIN, TVINx4 with 2.0 pitch connectors

11、 PCB size ： 11cm *8cm*1.4mm ， very suite for installing a 2.5’ HDD

# CubieTruck(is coming)



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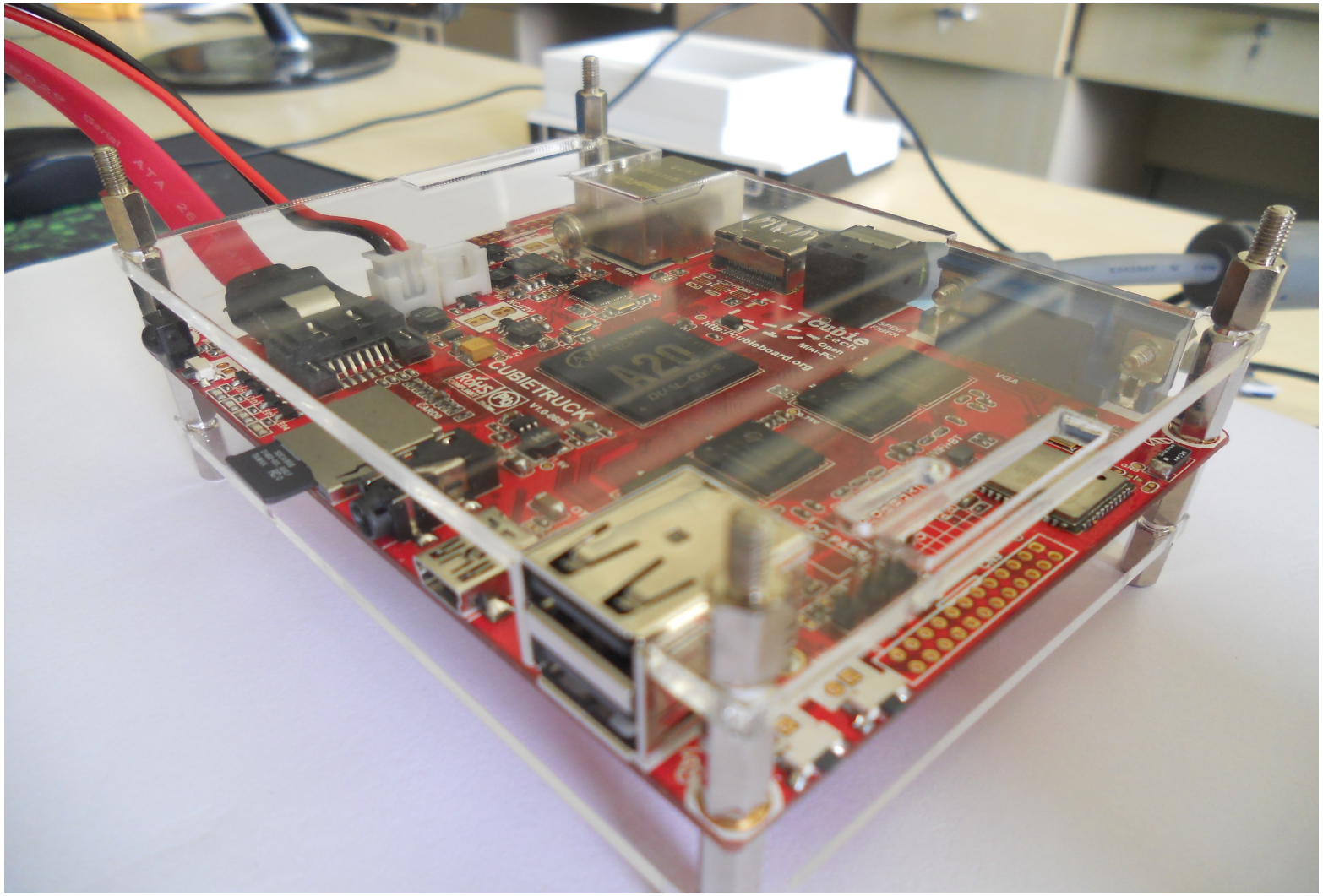


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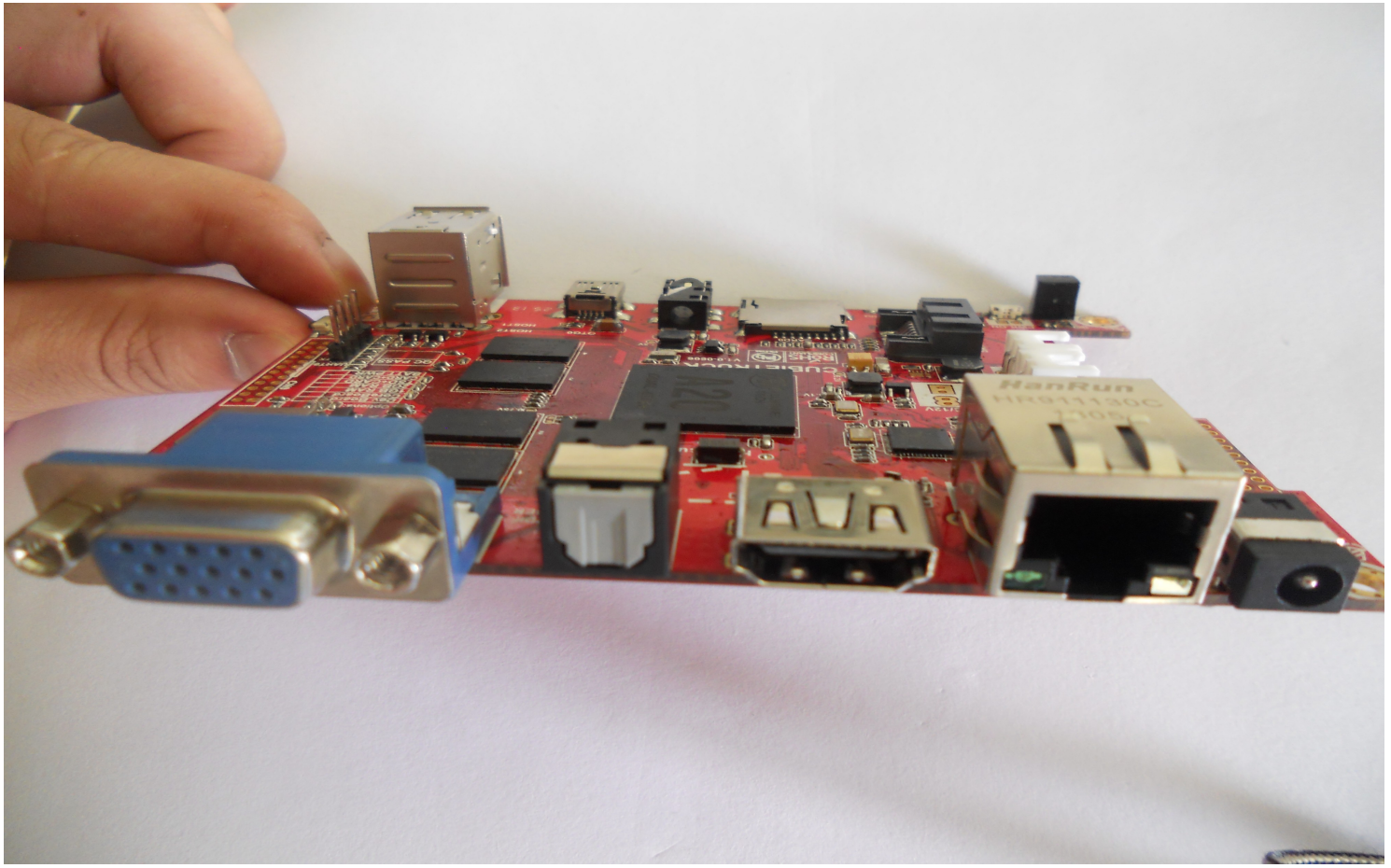

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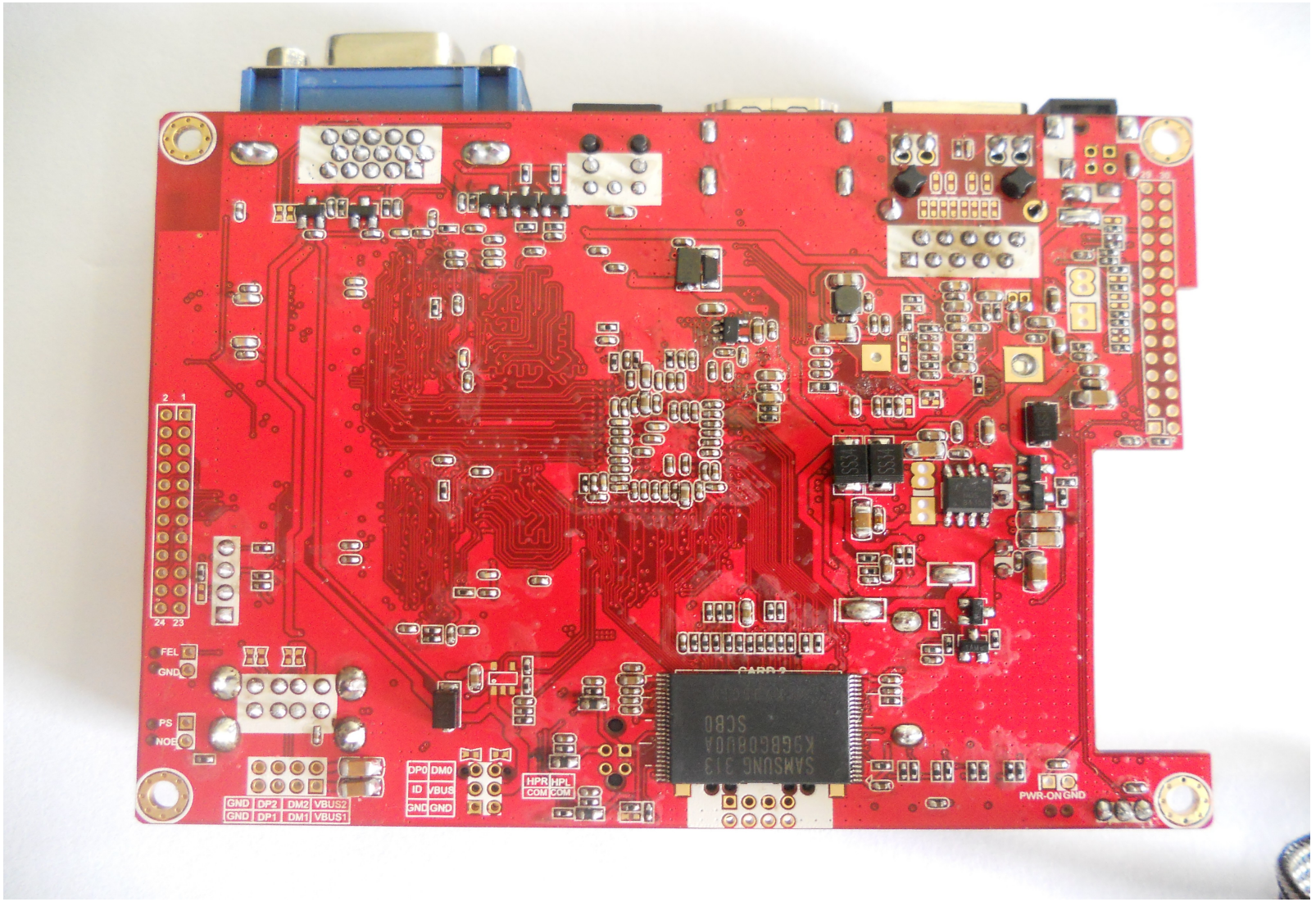


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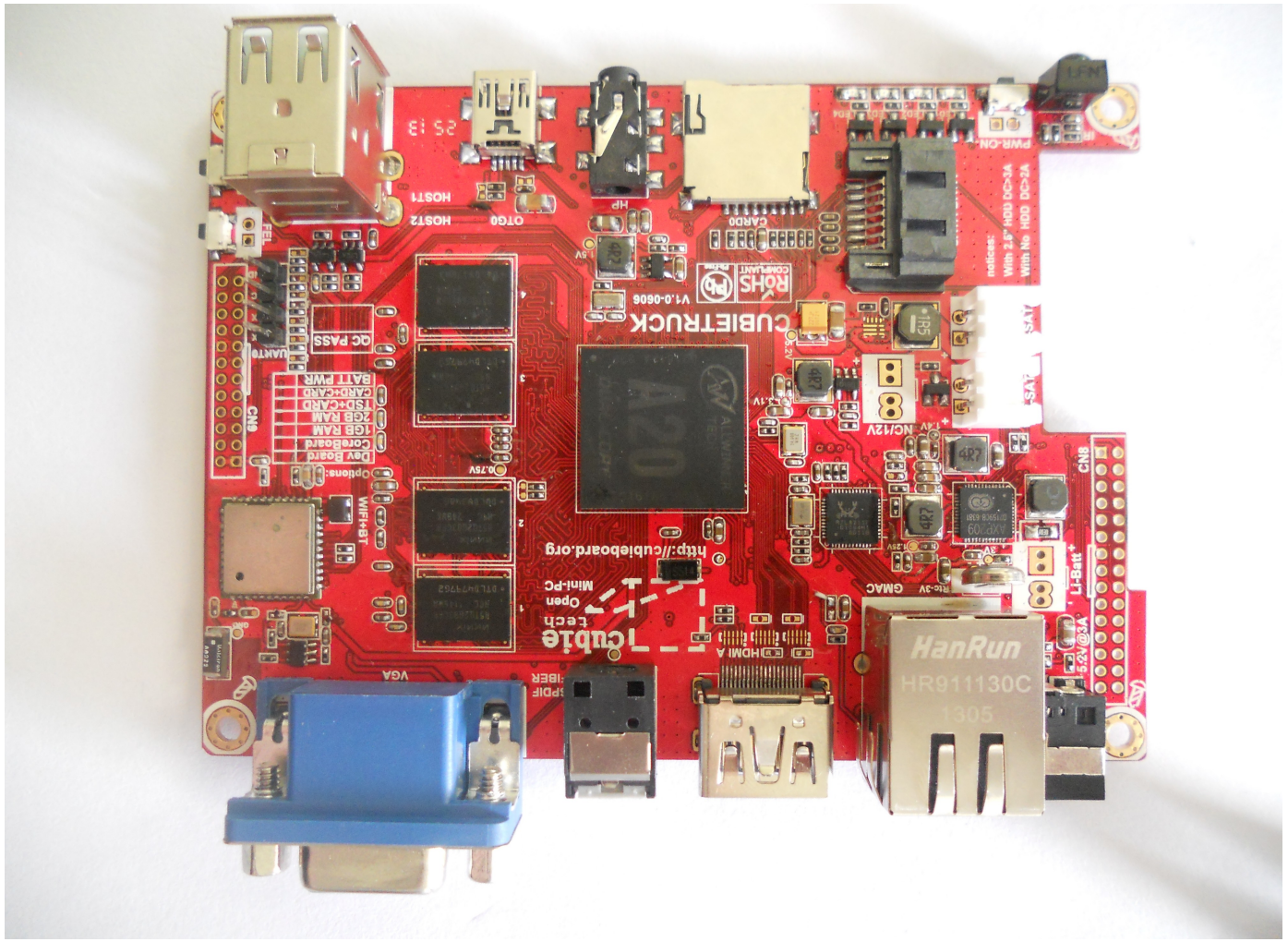
# CubieTruck

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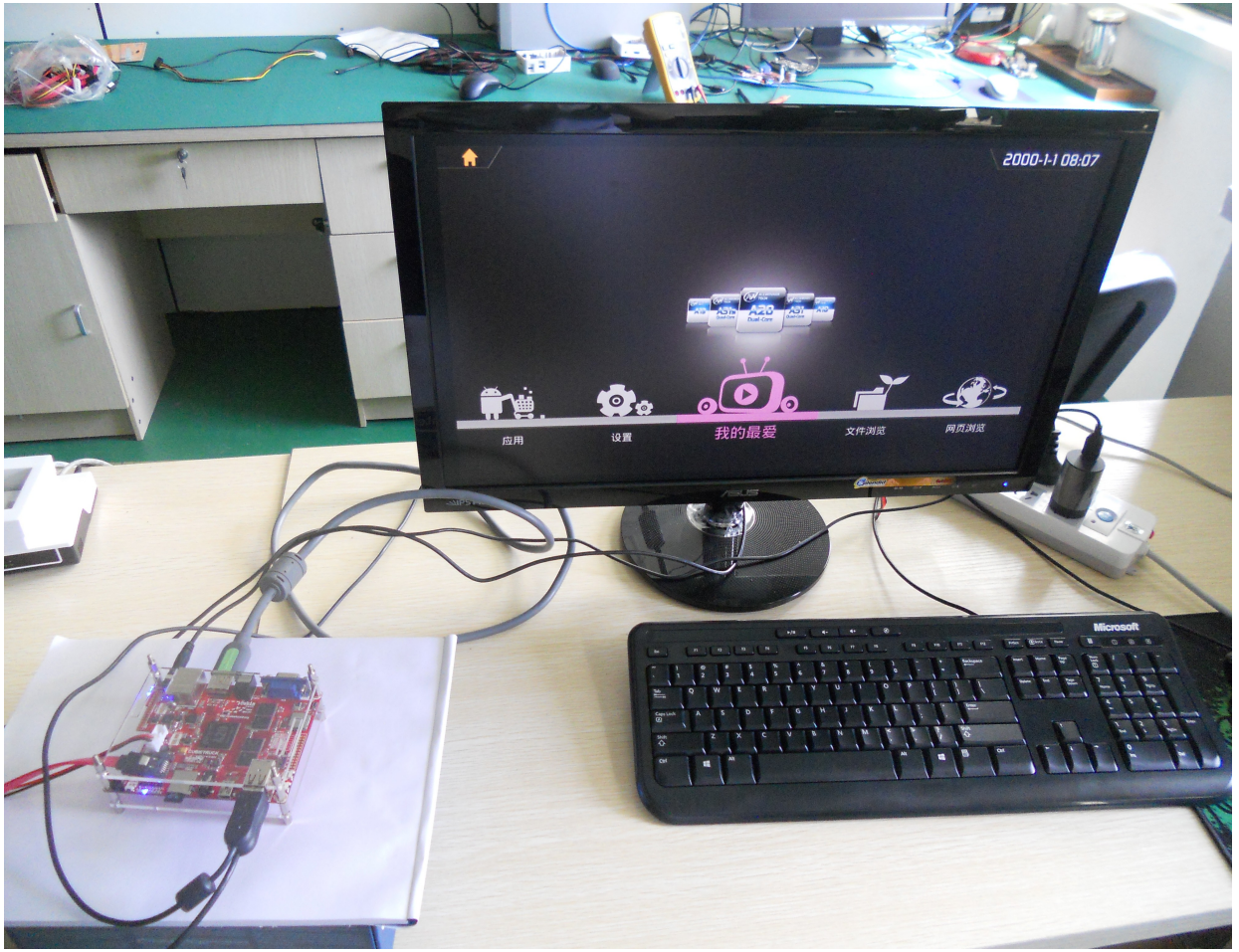
# CubieTruck as PC




Cubieboard.org

# How to get one pieces?

- Www.taobao.com
- Www.miniand.com
- Www.cubiestore.com
- Www.aliexpress.com

  and many others countries' distributor

You only need to pay for

- Cubieboard (a10)  ~299RMB, 46USD
- Cubieboard (a20) ~365RMB,

to get such interesting platform!!

# Thank you

Questions?