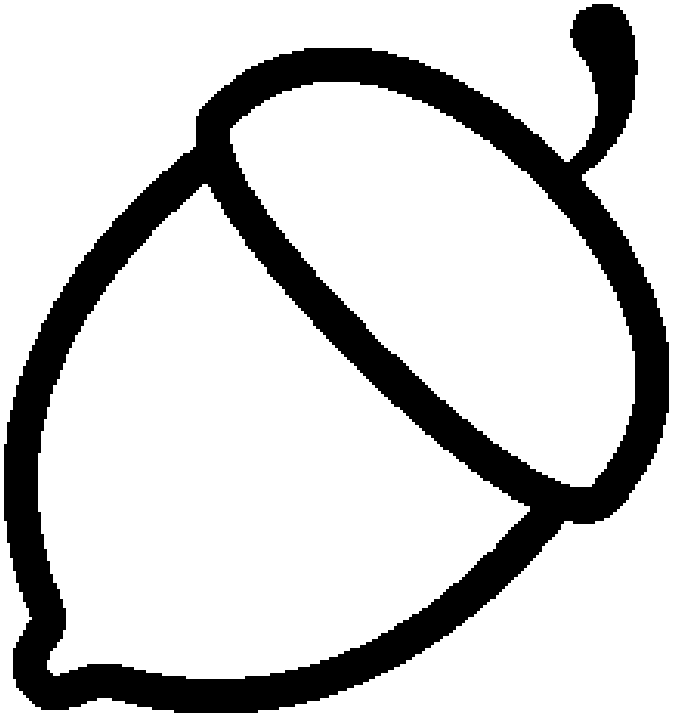
NutsBoard

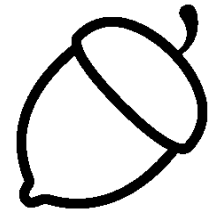


NutsBoard

Quick Start Guide

Chapter

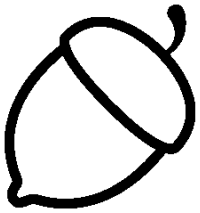
1. Walnut I/O List
2. Writing SDCard Images
   - Linux
   - Windows
3. How to debug
4. How to boot up
5. Q&A



NutsBoard

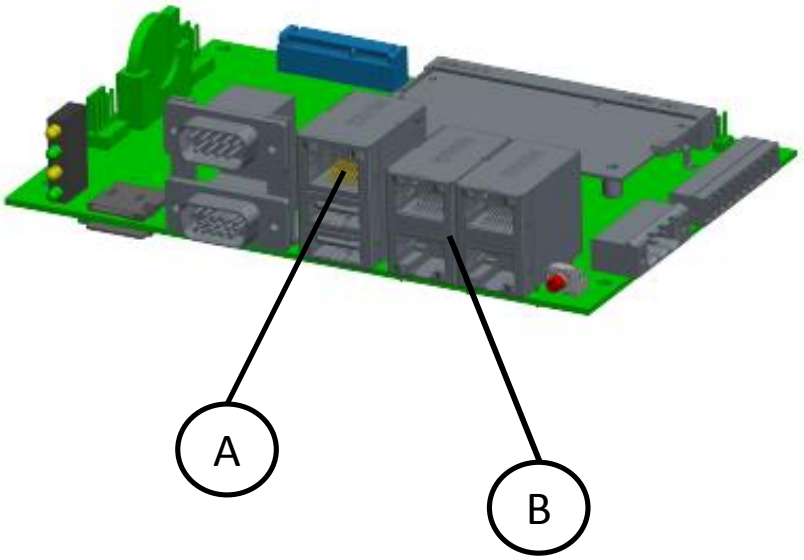
Walnut I/O List

- Wired networking
- USB
- UART
- SD Card
- LED lights
- Reset System
- Power input connector
- Digital In/Out
- 204 pin SO-DIMM connector
- CAN BUS/Debug Console
- RTC battery slot
- SIM Card slot
- Jumper of boot selection
- Mini PCI Express



NutsBoard

Wired networking

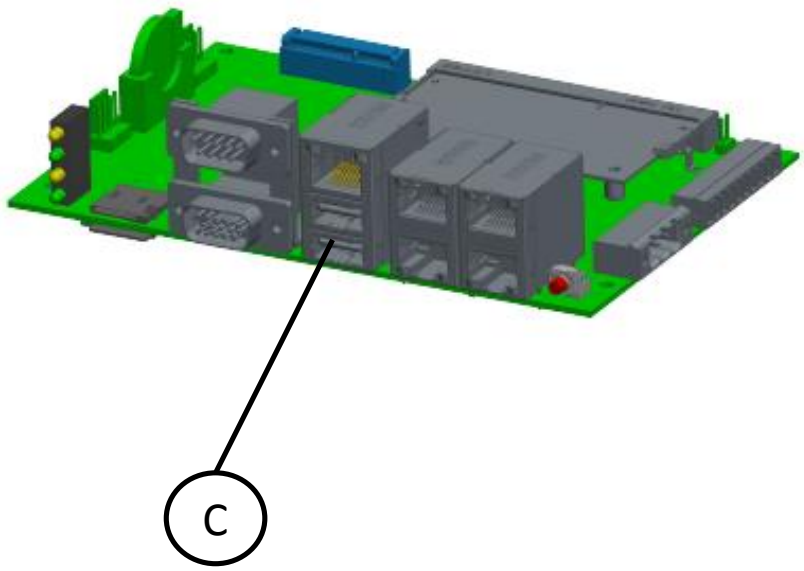


A): 1 Wide area network (WAN) Gigabit Port. Support , 10/100/1000 Speed.

B): 4 Local Area Network (LAN) Megabit ports. Support 10/100 Speed.

NutsBoard

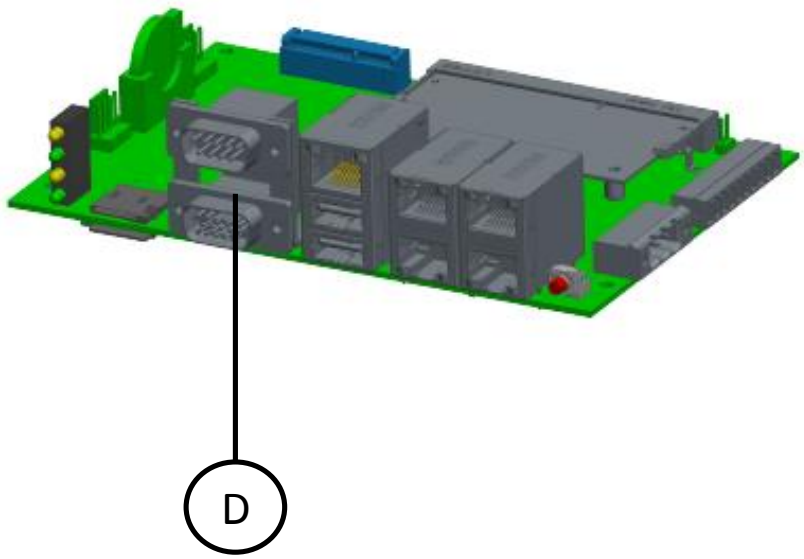
USB



C): 2 USB 2.0 port

NutsBoard

UART



D): 2 DB9 UART connectors.

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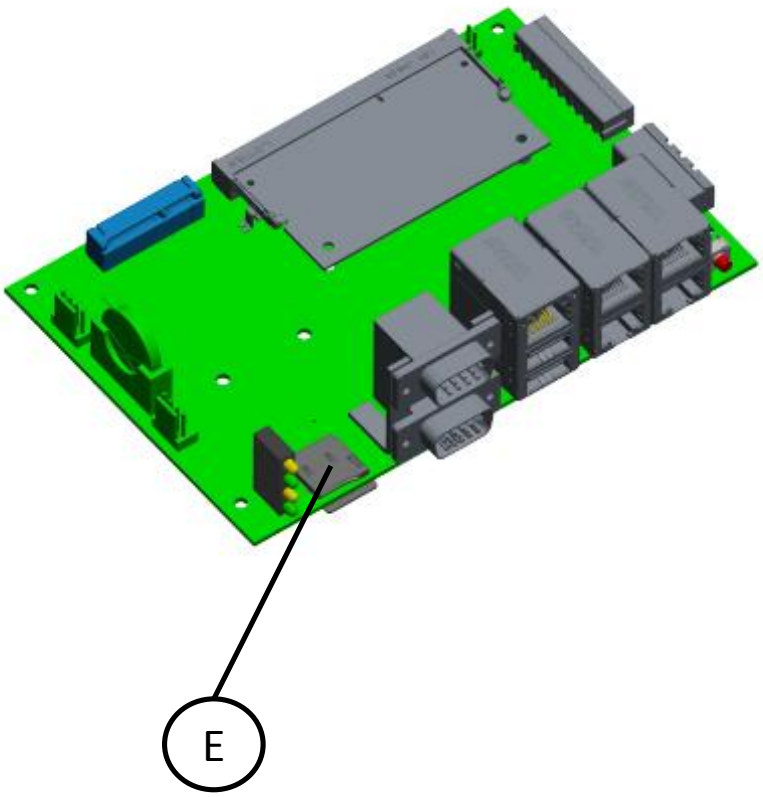
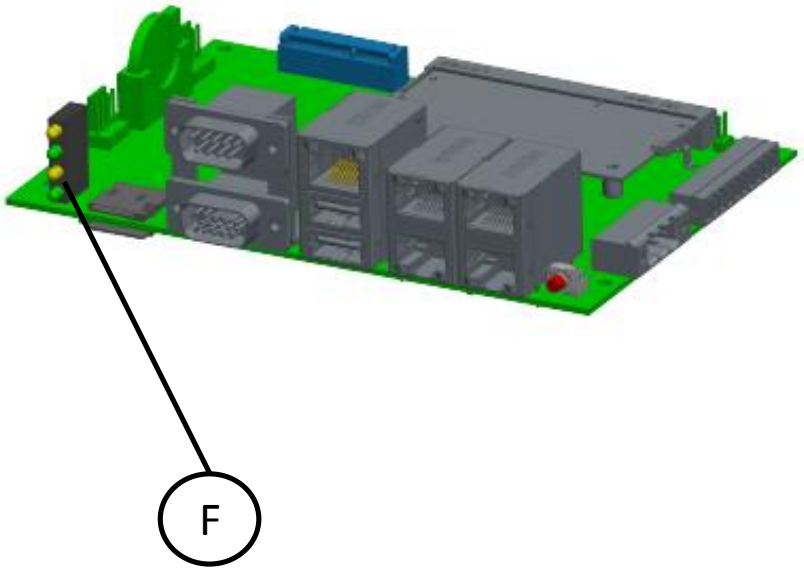
SD Card



E): Micro SD card slot
Maximum size: 32GB

NutsBoard

LED lights

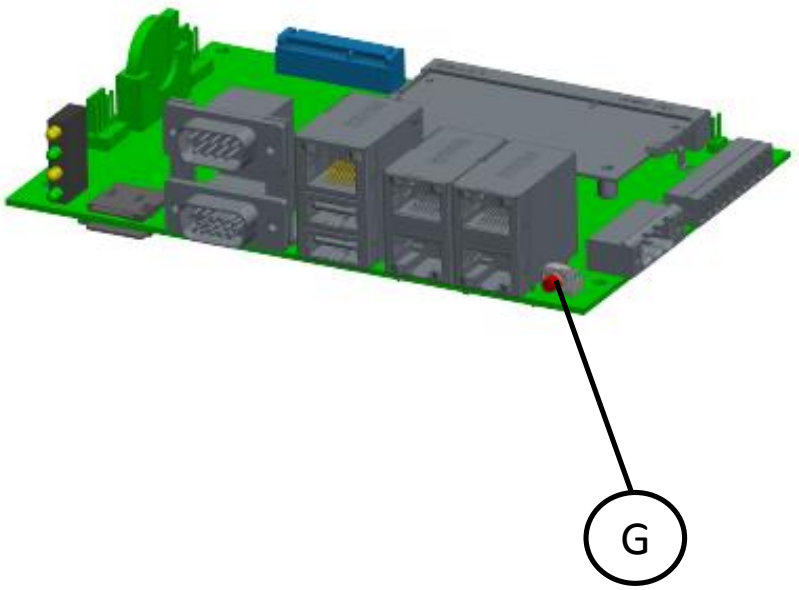


F): LED lights including:

1. Red
2. Yellow
3. Blue
4. Green

NutsBoard

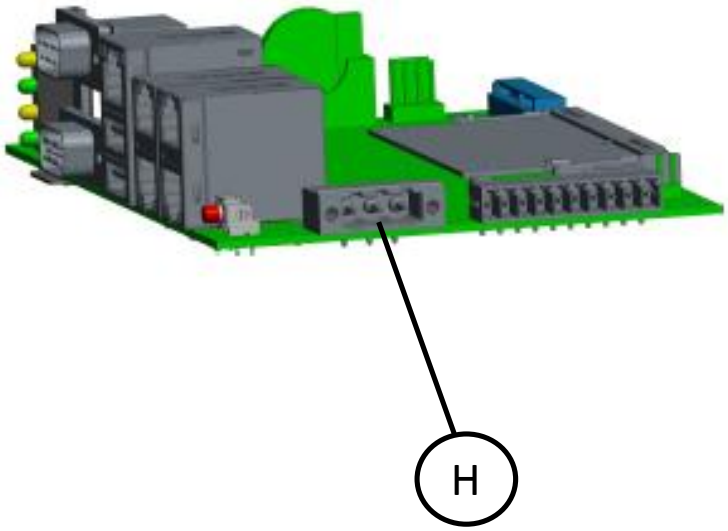
Reset button



G): Hardware reset button

NutsBoard

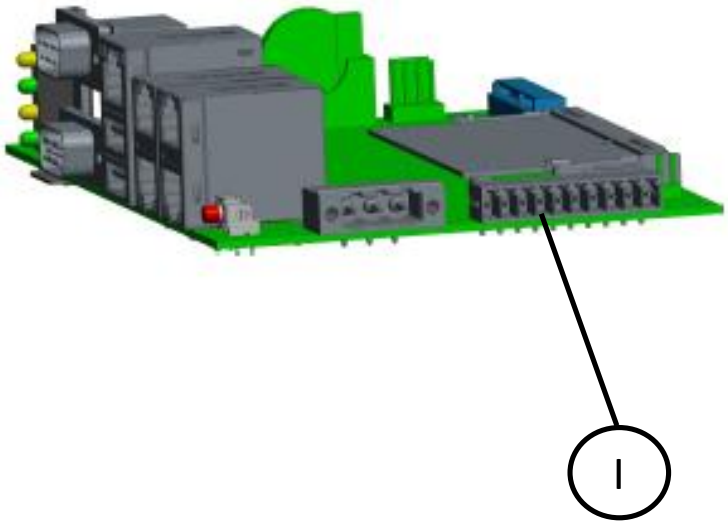
Power input connector



H): 12VDC POWER input connector

NutsBoard

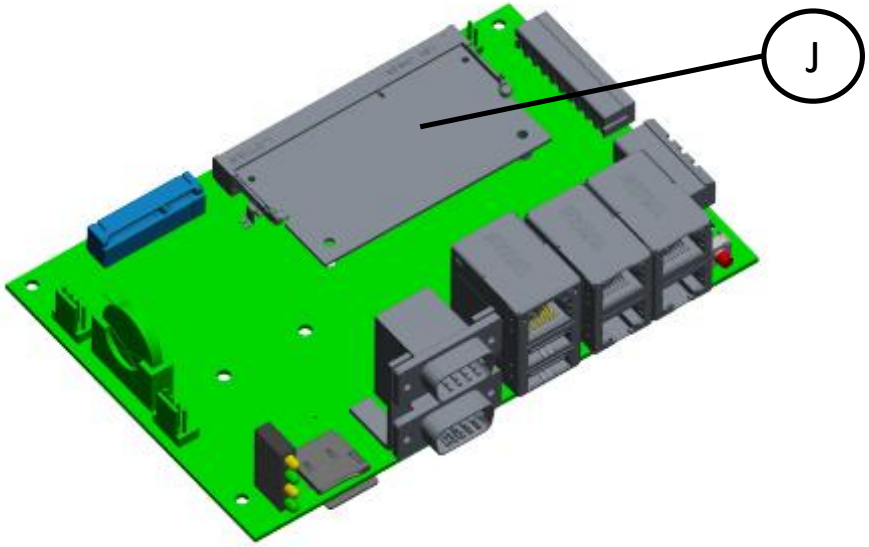
Digital In/Out



I): Digital In/Out connector

NutsBoard

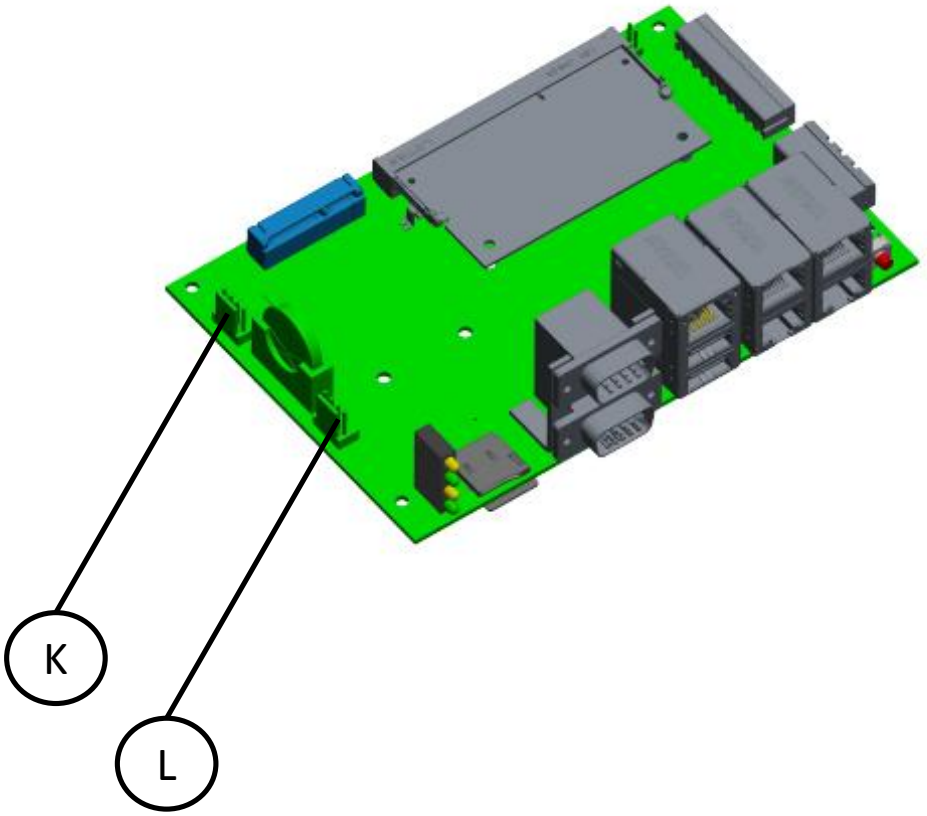
204 pin SO-DIMM connector



J): SO-DIMM connector with Almond SoM compatible

NutsBoard

CAN bus/ Debug console

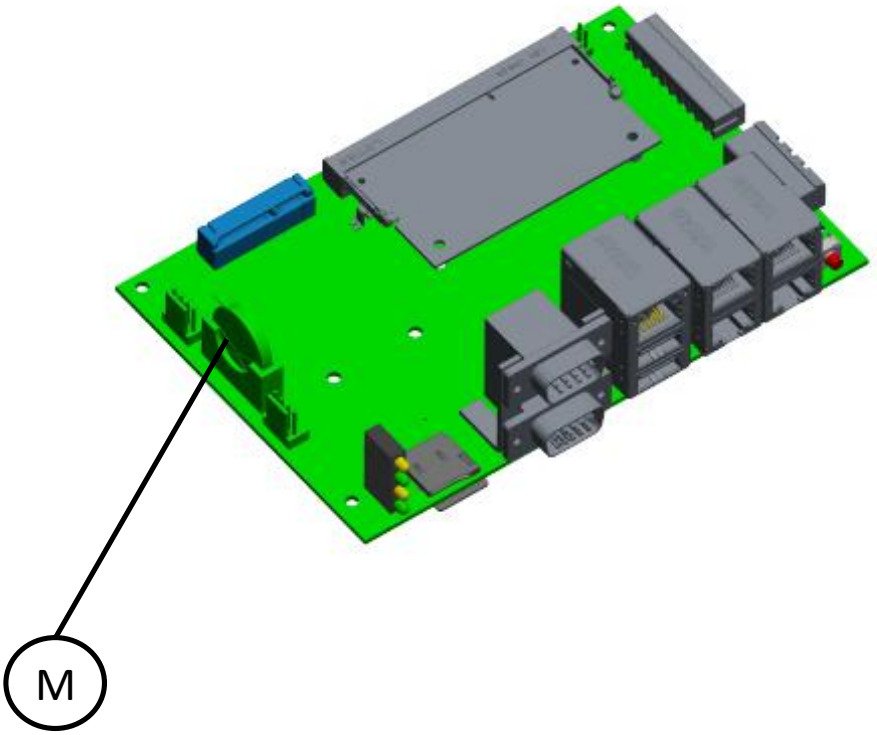


K): CAN bus connector

L): Debug console connector

NutsBoard

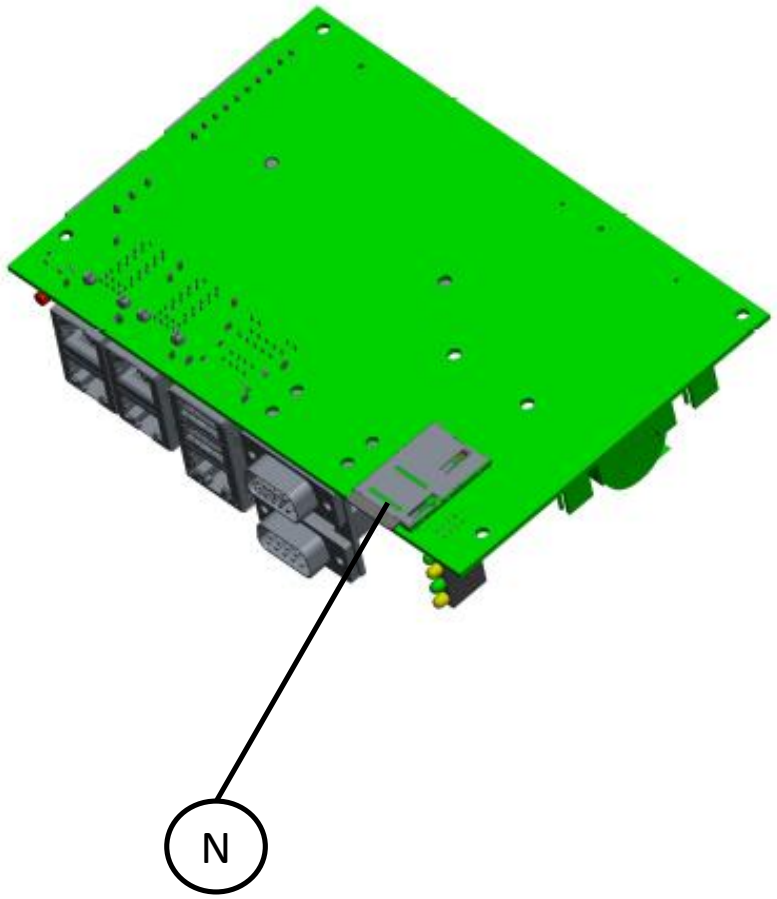
RTC battery slot



M): RTC battery slot

NutsBoard

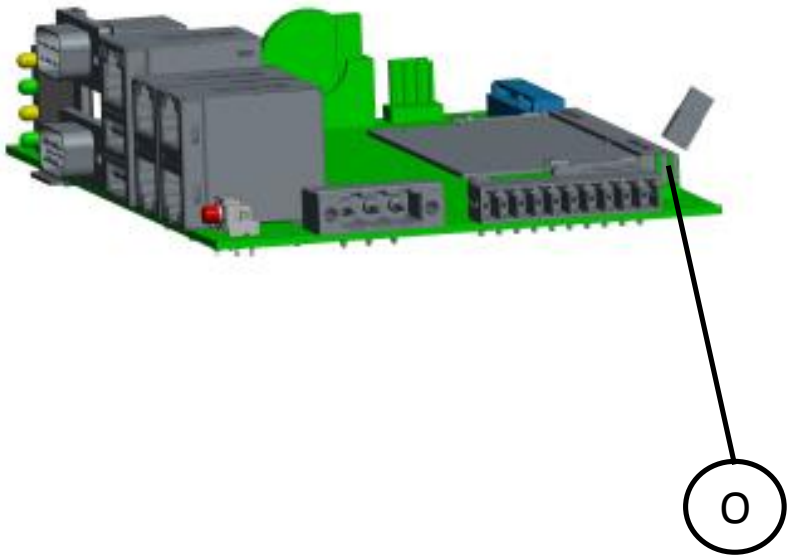
SIM Card slot



N): Subscriber Identity Module (SIM) slot

NutsBoard

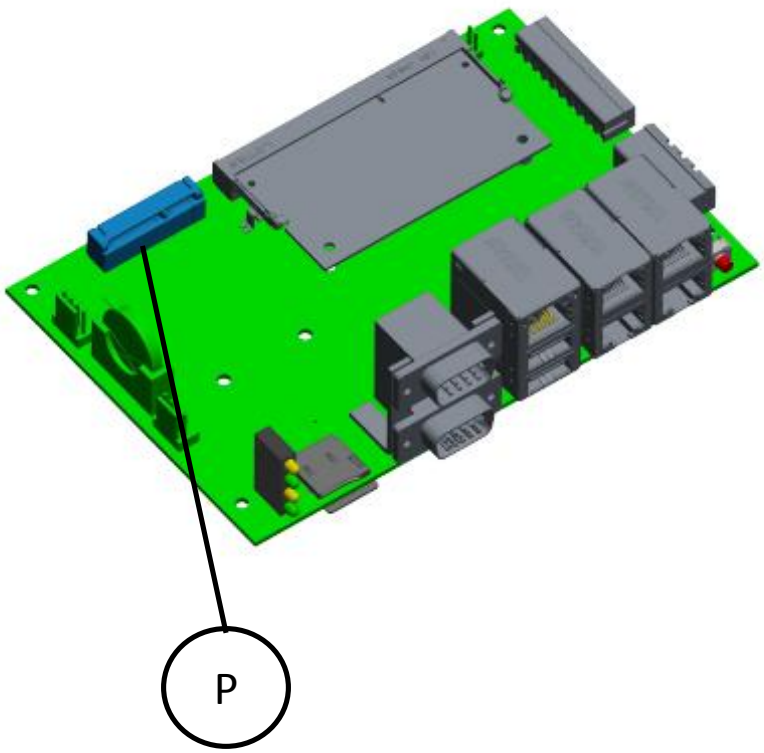
Jumper of boot selection



O): SD boot with jumper.
NAND boot without jumper.

NutsBoard

Mini PCI Express

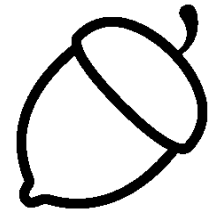


P): mPCIE connector with 3G/4G communication modules.

NutsBoard

Writing SDCard Images

- Linux
- Windows



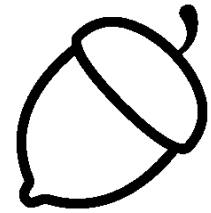
NutsBoard

Writing SDCard Images

- **Preparing the bootable microSD card for your Nutsboard**
  - The microSD card that is created below will contain the Nutsboard operating system. A large number of demo runtime images are available.
- **Procedures to get you started**
- a) Download your preferred Nutsboard runtime image.

- https://goo.gl/kBcdij

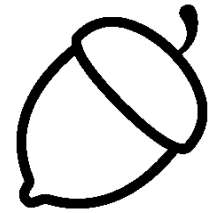
- b) Extract the file that you just downloaded
  - click on the file “Through your browser to download”.
  - The extracted files will contain a file ending in *.zip*
  - Please uncompress this file.



NutsBoard

Writing SDCard Images

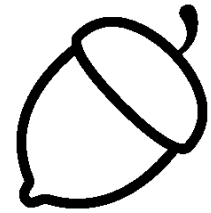
- Linux
  - This paragraph explains how to create a SD card using Linux desktop or notebook. The SD card can be made using a standard terminal.
  - “dd if=*.img of=/dev/sdd bs=1M ”
  - replace *.img with the full name of the SD card image and replace /dev/sdd with your SD card device".



NutsBoard

Writing SDCard Images

- Windows
  - For Windows we suggest writing sdcard images with this tool “usbit.zip”, Please Download file.
  - https://mega.nz/#!NsUkha4Q!NIyvA-bSPDTfGFNg8IlhSAbv7t9lGexmQlFDV3qt_b8
  - click on the file “Through your browser to download”.



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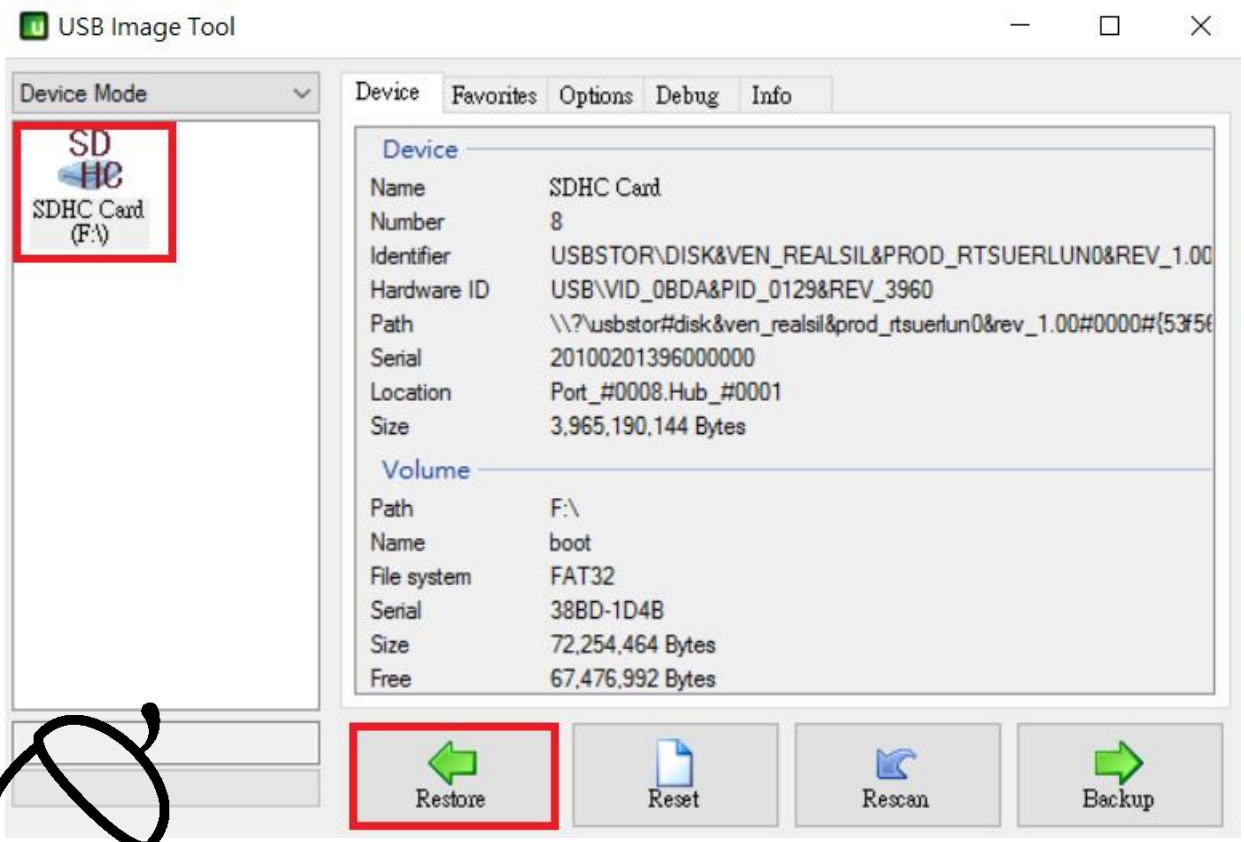
Writing SDCard Images

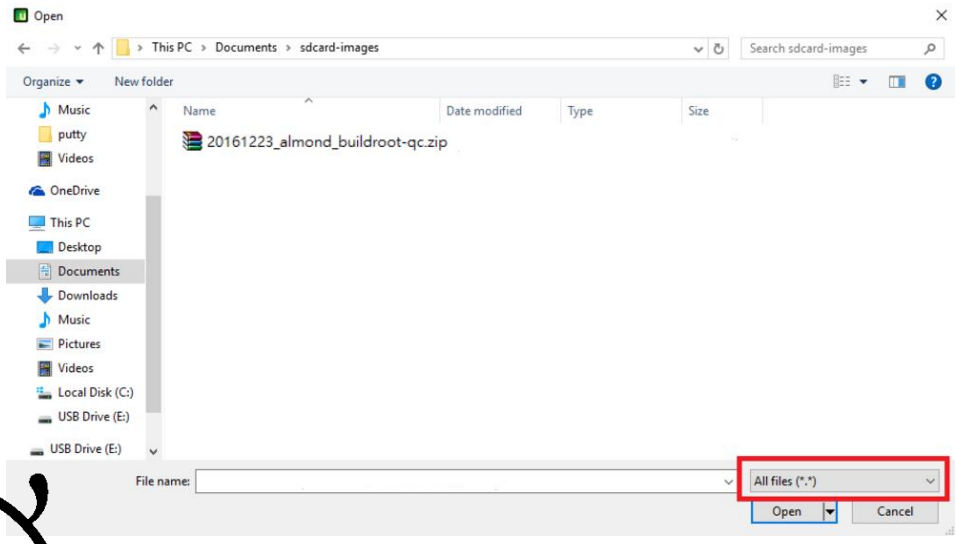
- When you open the application, you should see on the left your sdcard. Then you'll need to press the "Restore" button to write a sdcard image to it.



NutsBoard

Writing SDCard Images

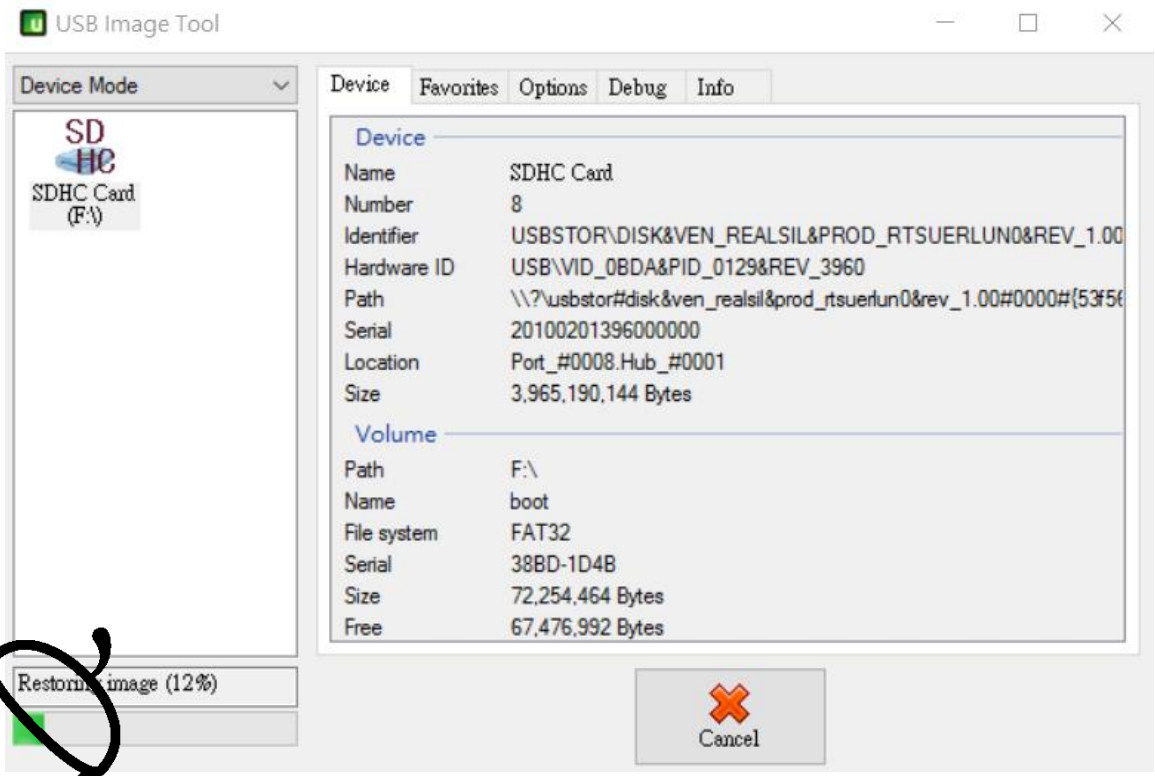
- You will need to assign sdcard image location on disk, then select “All Files (*.*)” from the drop down on the bottom right – this behavior will help us to find .sdcard or .sdcard.gz files. In the end, select the image and click“Open”:



NutsBoard

Writing SDCard Images

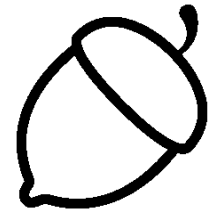
- Once you hit the Open button, the sdcard writing should start. You'll see a status bar on the bottom Bottom left corner as it progresses. Once it's at 100% you're good to go:



NutsBoard

How to debug

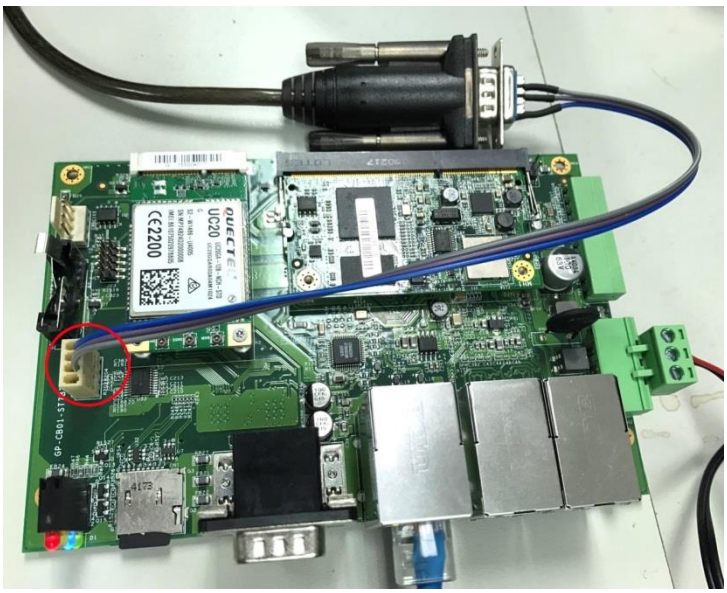
- Linux
- Windows



NutsBoard

How to debug

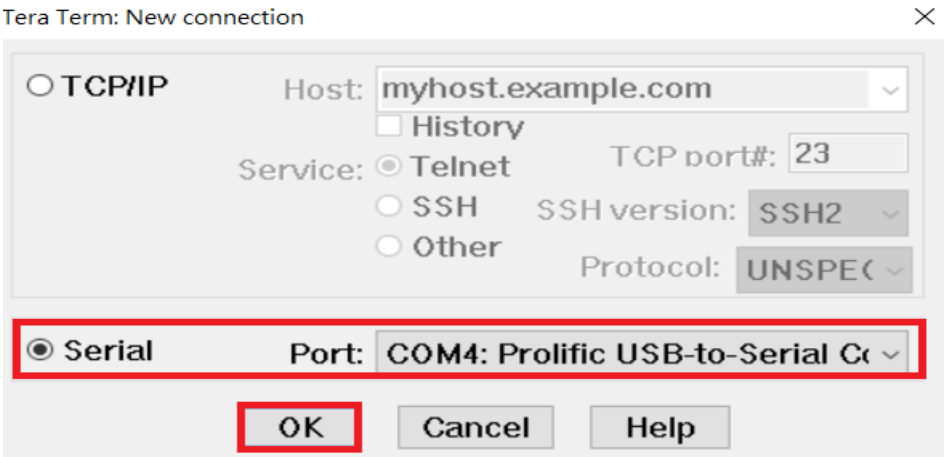
- If you want to control or display the debug console, see the following instructions:
  - RS232: Ping 2, 3, 5 Connecting line To J13: 2, 3, 4.(as the picture shows).



NutsBoard

How to debug

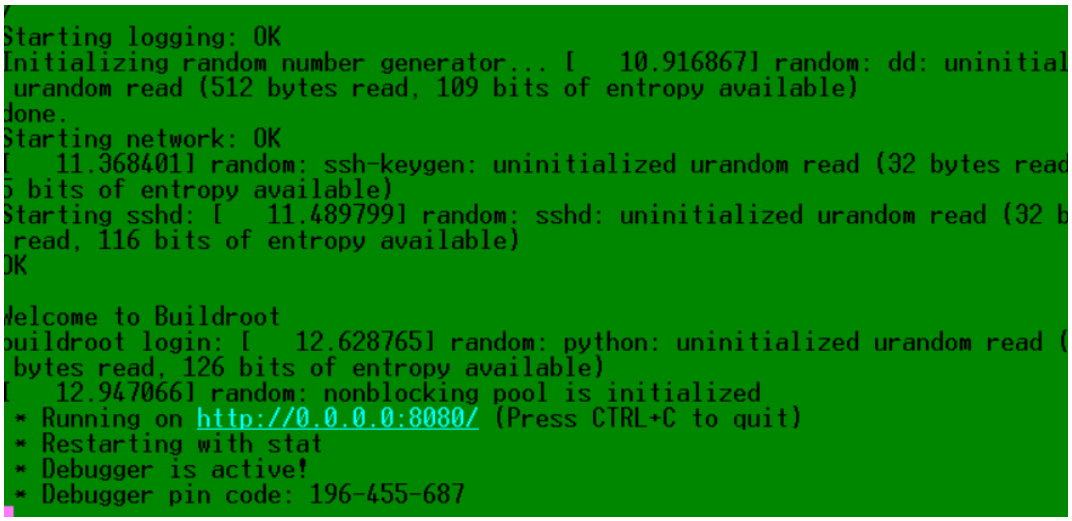
- Windows
  1. Install TeraTerm Tool to your PC.
  2. Choose correct serial port:



NutsBoard

How to debug

- Windows
  1. Open the TeraTrem and set Baud rate to 115200
     - setup→Serial Port→Baud Rate “115200”
  2. See the result:



NutsBoard

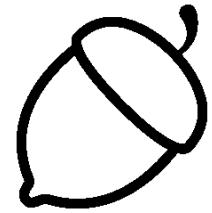
How to debug

- Linux
  - Install minicom first

```
chris@ubuntu:~$ sudo apt install minicom
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  libappindicator1 libindicator7 libpango1.0-0 libpangox-1.0-0
```

  - Setting the minicom configuration

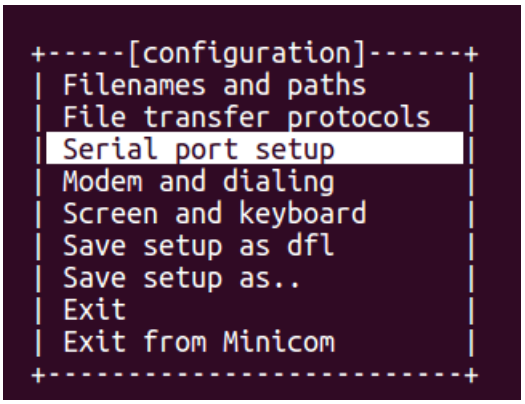
```
chris@ubuntu:~$ ls /dev/ttyUSB0
/dev/ttyUSB0
chris@ubuntu:~$ sudo minicom -s
```

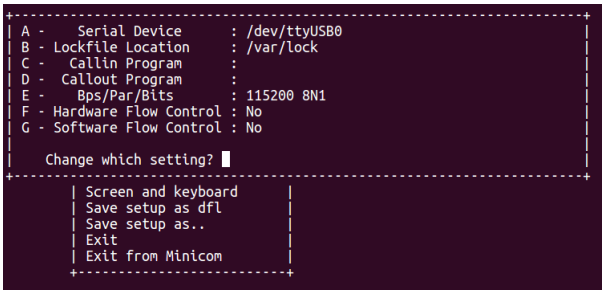


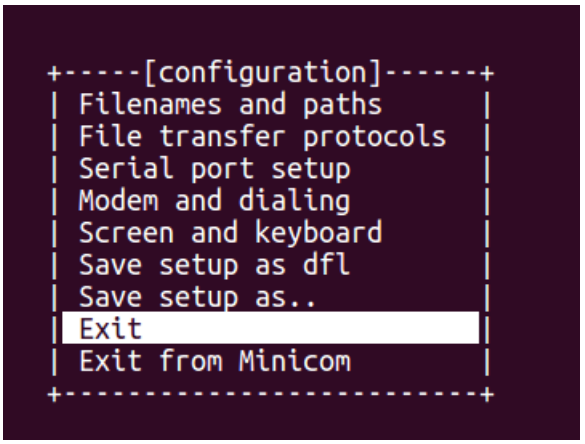
NutsBoard

How to debug

- Linux
  - minicom configuration,
    - press “A”,Modify “ttyUSB0”
    - press ”F”,change “N”
    - press “Enter”







NutsBoard

How to debug

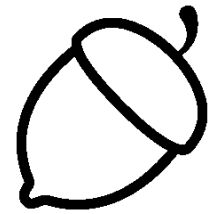
- Linux
  - Login

```
Welcome to minicom 2.7

OPTIONS: I18n
Compiled on Feb  7 2016, 13:37:27.
Port /dev/ttyUSB0, 14:48:38

Press CTRL-A Z for help on special keys


Welcome to Buildroot
buildroot login: /root/qc-web
```

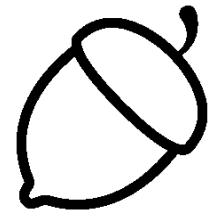


NutsBoard

How to boot up

- Please follow these the steps from Chapter 1:

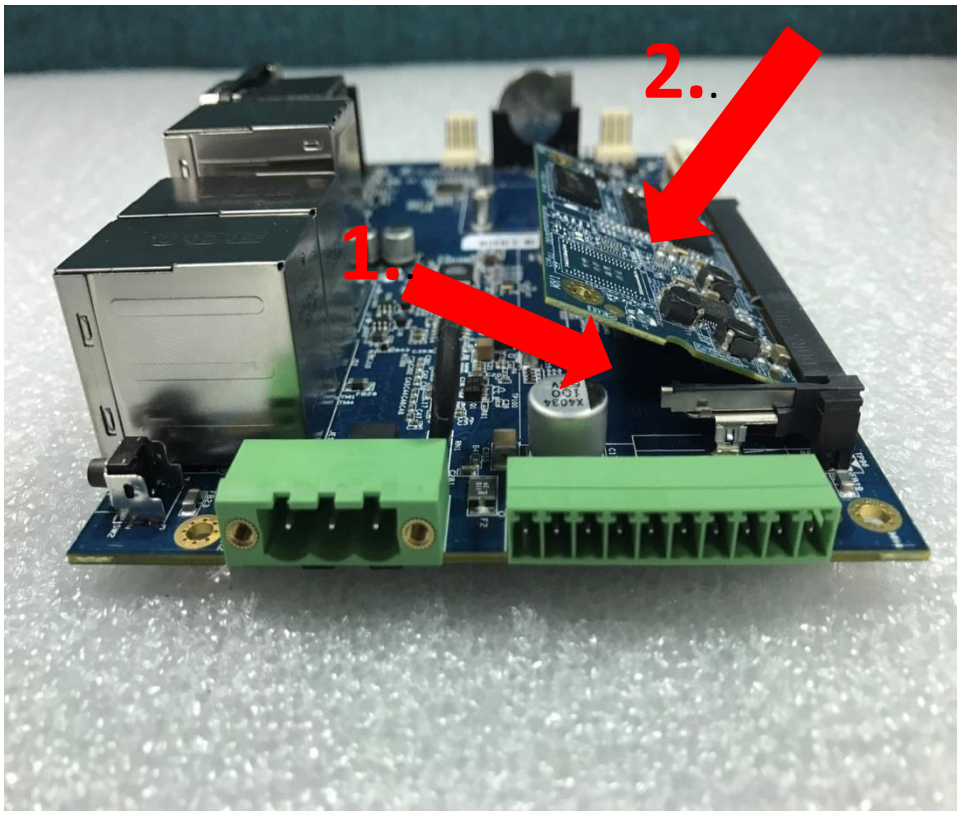
  J → A → L → E → H



NutsBoard

Q&A

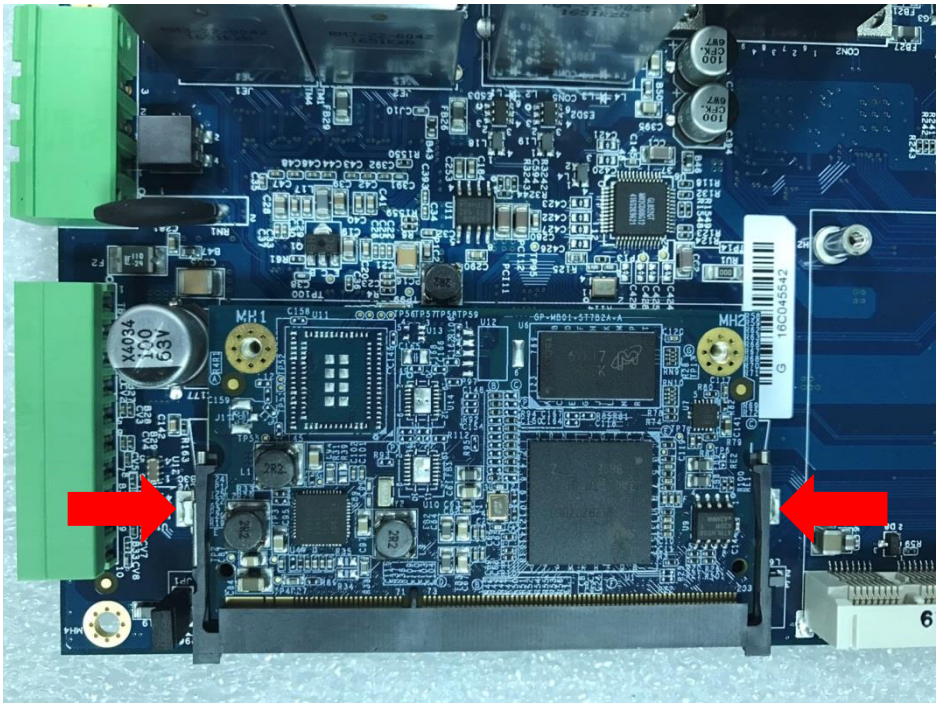
- Install your Almond into Walnut
  - Set 1: Tilt installation, Insert into connector as 45 degrees.
  - Set 2: Push down.



NutsBoard

Q&A

- Installation 204 pin SO-DIMM connector
  - Set 3: push the side to fixed your Almond SoM.



NutsBoard