

A close-up photograph of a Raspberry Pi 3 Model B+ circuit board. The board is green with various components visible, including a large silver heat sink on the left, a black micro-USB port on the right, and a black Ethernet port at the bottom. The text "Raspberry Pi 3 Model B+" and "© Raspberry Pi 2017" is printed on the board. The background is slightly blurred, showing the intricate details of the PCB and its components.

Let's play mini-card-sized computer boards on the business!

Masafumi Ohta
Japanese Raspberry Pi Users Group

Masafumi Ohta

- Masafumi used to be Core Contributor for OpenSolaris project by Sun Microsystems, had OpenSolaris-laptop-supporting project and helped Automate Installer project.
- Masafumi has founded Japanese Raspberry Pi Users group with some Raspberry Pi nerd and geeks, and he has been volunteering Raspberry Pi Foundation since 2012.
- Masafumi has become Active User Committer at OpenStack Foundation contributing Infra Project at big-name Automotive company in Japan
- Masafumi has become ARM INNOVATOR helping ARM business in Japan.



日本語フォーラムについて

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» Fri Dec 14, 2012

2:14 pm

太田といいます。何人かの日本の皆さんはじめまして。日本Raspberry Piユーザグループの代表をします。

ようやくと悲願でもありました日本語フォーラムを作ってくださいました。まずここまで来たことに日本のコミュニティメンバーの皆さん、また日本でこの機械をお使いいただいている方、これからお使いいただこうと考えている皆さんに御礼申し上げます。

是非今後日本のコミュニティを盛り立てるためにもどうぞこのフォーラムをどしどしお使いくださいませ。普段日常のお仕事もあり、ポスト承認がおくれちゃったらごめんなさい、なのですが、できる限りスムーズに皆様がここでいろいろお話できるよう、頑張ります。

#ちょっとさっきまで他のモデレータにおせえぞ承認とおこられますた 😞

で、スパムや商品売り込みに関しては結構厳しくやってます...他のモデレータも他国のフォーラムであってもキチンと見てます。スパムやあやしい商品売り込みであろうポストは僕以外からも削除されることをあしからず承知くださいませ。(Google翻訳で調べているようですよ、まちで)

基本ルールは通常のこういうOSS系フォーラムと変わりありません。節度と紳士淑女であらんことを。なにか使い方でご不明な点などありましたらどしどし太田までください。

ではでは、太田でした。



Forum Moderator



Posts: 251

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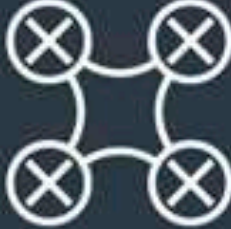
Location: Tokyo



arm



INNOVATOR
PROGRAM



A mini-card-sized computer board, likely a Raspberry Pi 4, is shown lying on a wooden surface. The board is black with various components visible, including a large black fan mounted on a silver heat sink, a red USB cable connected to a port, and several other connectors and components. The text "What is the mini-card-sized computer boards?" is overlaid in white.

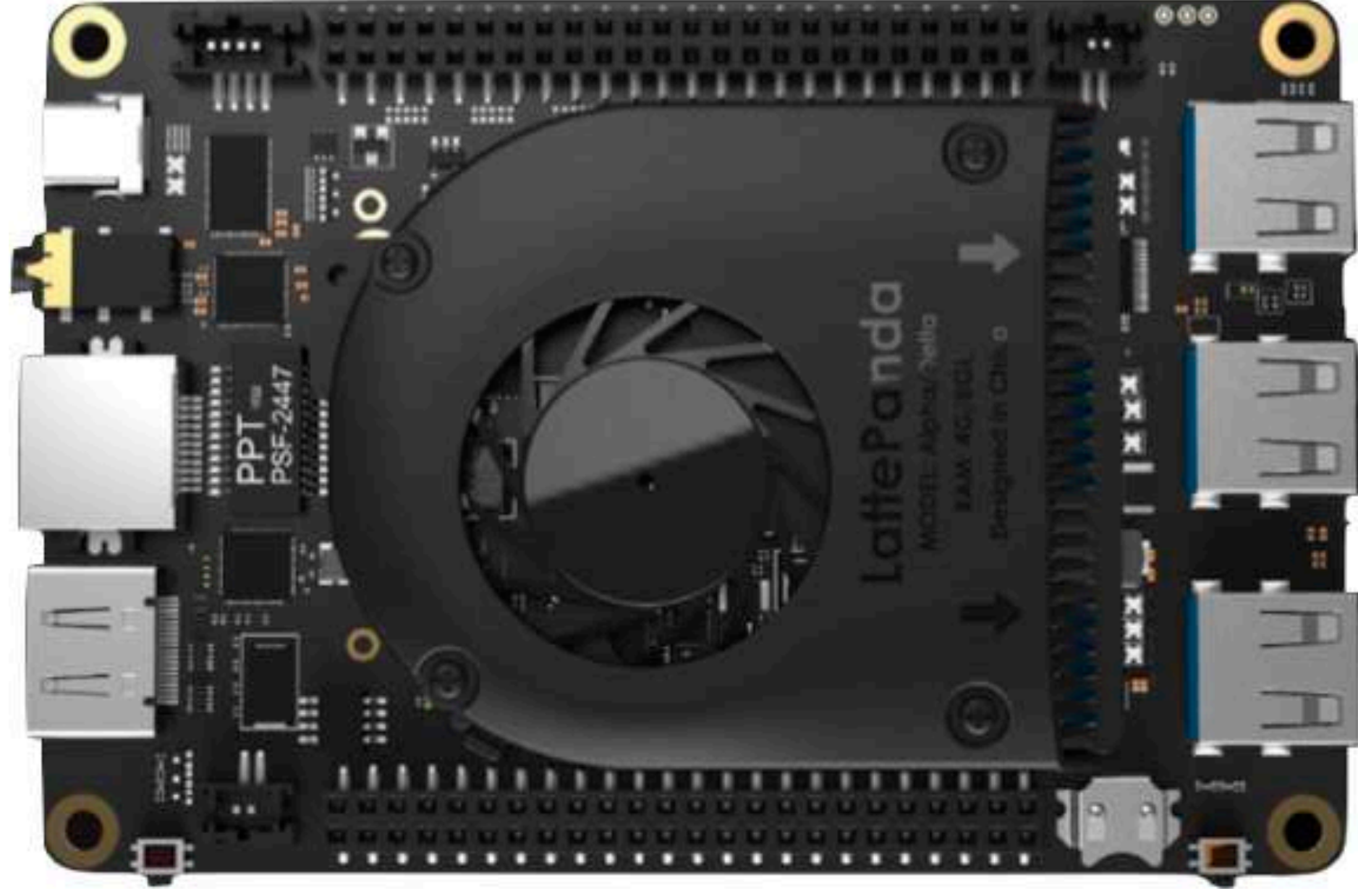
What is the mini-card-sized computer boards?

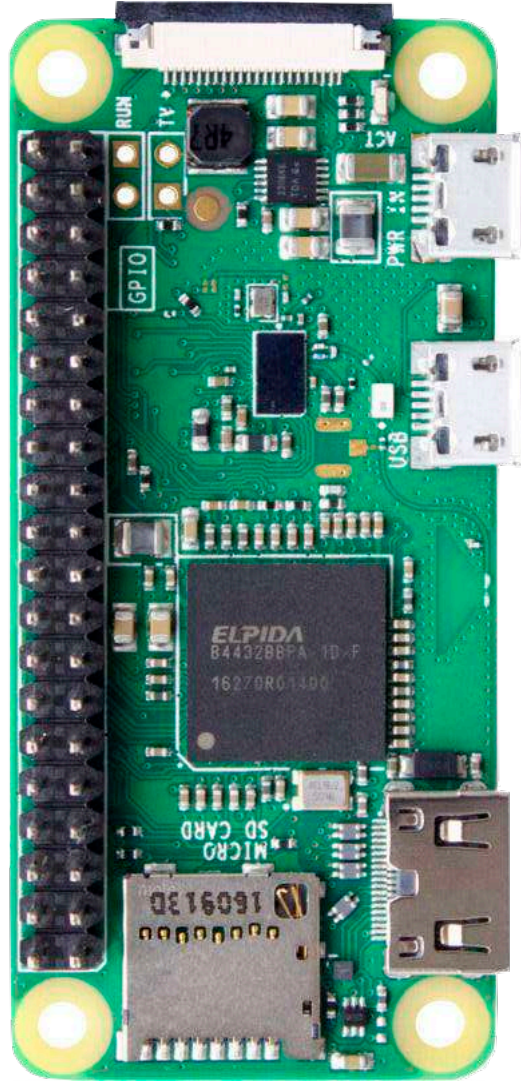


85mm
(3.35inch)









What is mini-card-sized computer?

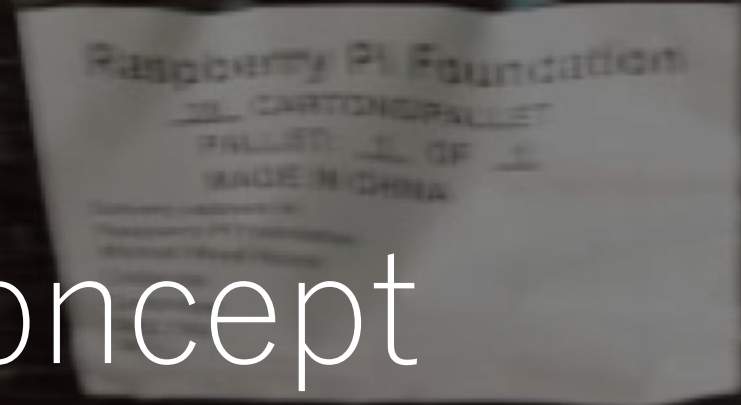
- Small factor like name-card-size
 - Raspberry Pi 3B+ is the standard name-card-sized factor
- Bare and embed
 - Easy to access hardware stuff and useful for DIY and IoT
- Cheap
 - Raspberry Pi Zero (W/WH) is very cheap, it is 5-15US\$
- Run full OS
 - Run full-distribution OS like x64 PC
(Linux, BSD, hopefully run Windows10)

Why mini-card-sized computer?

- PC is the office and internet surfing tool and expensive.
 - PC works friendly with MS Office and net surfing apps
 - It is too complex to know/hack the whole of things on PC
- SoC are getting smaller, faster and cheaper rapidly
 - Smartphones are enough to use internet surfing in daily life.
- Raspberry Pi has opened the door to expand computer use.
 - It can be useful to learn not only software but also hardware.
 - It can change dynamically smaller embedded runs on full distro OS.

Model Concept

Why are they cheap?



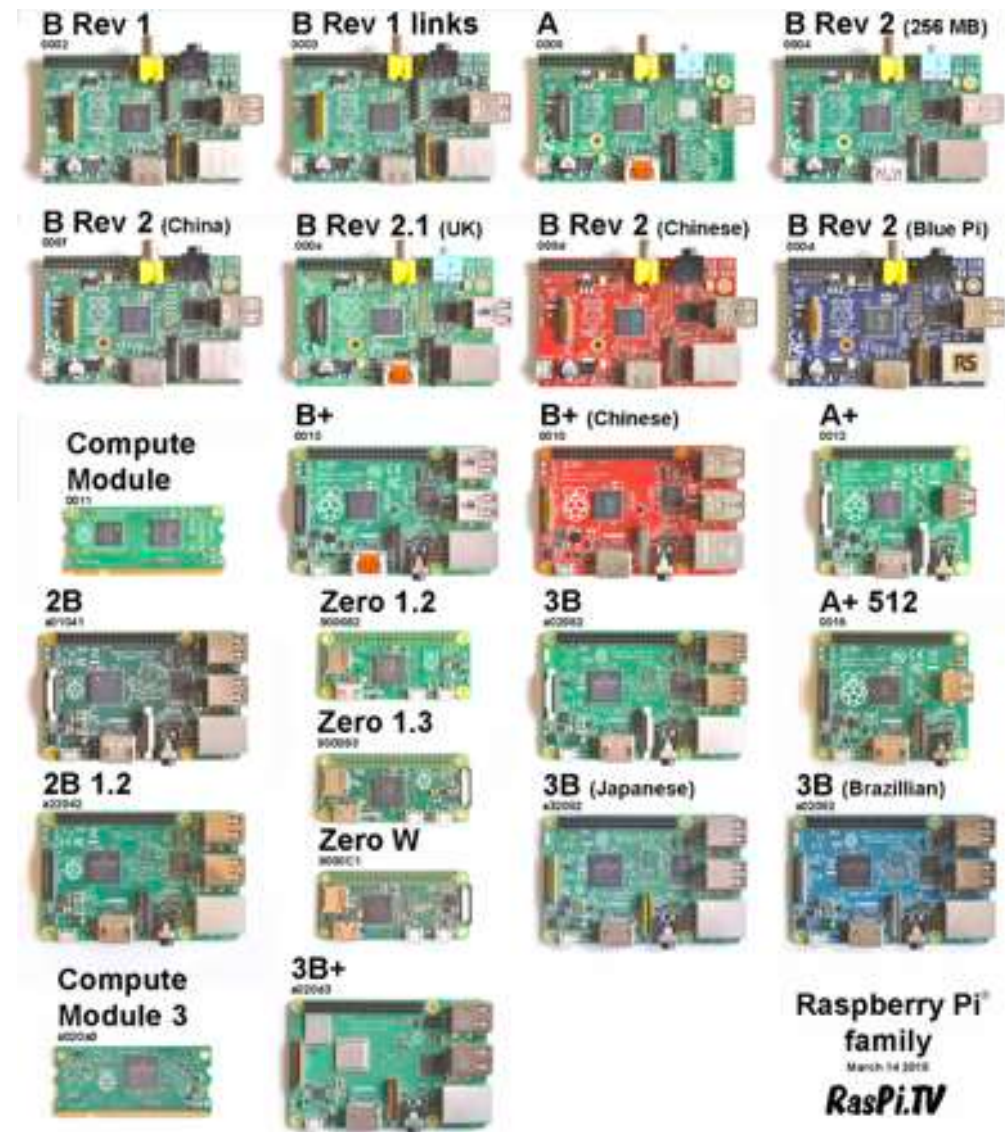
The background image shows a historic building with Gothic architecture, featuring large arched windows and intricate stonework. In the foreground, a river flows, and several punting boats are visible. One boat in the lower left has a person in a hat and another person. The scene is set in a lush, green environment, likely a park or a historic district. The text is overlaid on the image in a white, sans-serif font.

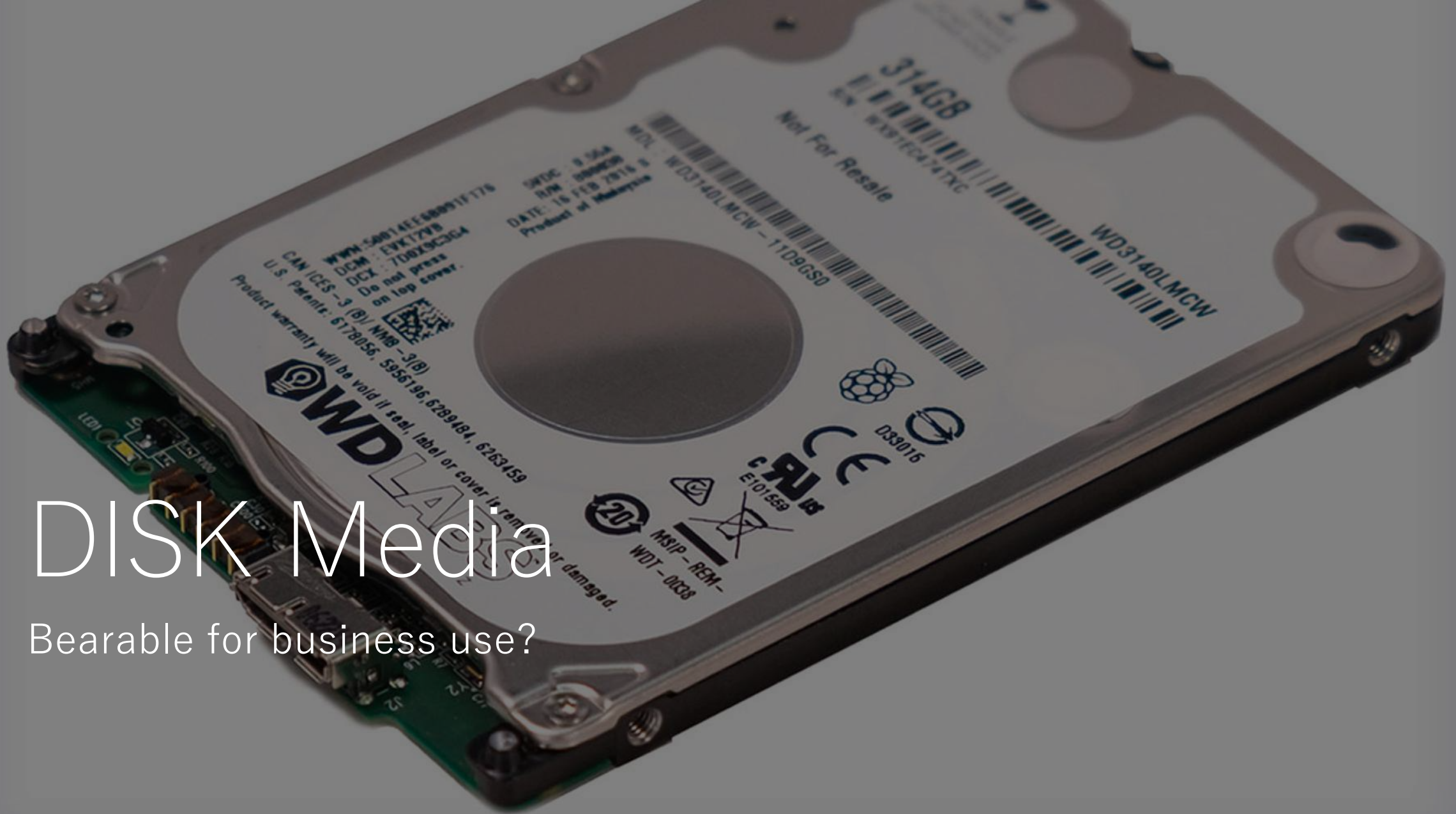
They were for educational use at the first

- They should be ignored the cost, price is very important.
- They should be the same price as textbook
- They should encourage PC newbie use.
- They should be cheap student have a chance to 'break' for their studies.
- 'Forked machines' from China and reduce the TOC chasing each other prices. say 'Raspberry Pi (fake) compatible machine' is in bloom' and it makes less prices

Many more variation

- Raspberry Pi Foundation has been released many more versions of Raspberry Pi
- It is now not only use for education but also many more use - business and more.
- RasPi.tv has corrected many more version of Raspberry Pi pics and blogged on his website. <https://raspi.tv/2017/new-raspberry-pi-family-photo-28-feb-2017>





DISK Media

Bearable for business use?

Which disk media is useful..

- SD Card – really weak, very nervous electric voltage inputs, less write counts, software issues on Linux
 - <https://blog.mythic-beasts.com/wp-content/uploads/2017/03/raspberry-pi-cloud-final.pdf>
- eMMC – good, low power consumption, low speed but costs higher than M.2 NVMe SSD.
- USB DISK – good, depends on USB controller
- Network boot/PXE – manage easily if you run many more PCs but need to consider the network
- SDIO/SPI – depends on use

A close-up, slightly blurred image of a dark brown leather bag. The bag features blue stitching along its edges and a metal clasp on the right side. The background is a solid light gray.

Robustness

Is it really robust?

Are they really robust?

- You should check the robust issue before using it.
- Raspberry Pi is supposed children treat it roughly
 - They take it into their bags going back and forth between school and home.
- Some might be 'fried' because of unexpected momentary power.
 - We should know AC Adapter is not always correct in the voltage and Ampere.
 - We should deal 'electric power' on them carefully.



Kernel

is it really fit on the boards?

Kernel update is not so easy

- The most basic way to update is 'compiling the latest and change it'
 - we often need to modify the parameters or add the patch to the kernel to compile.
 - Updating u-boot and dtb is different from each other.
 - Check carefully updating rootfs
 - Some boards may NOT fit original kernel see my project 'How to use original Rockchip Kernel on tinkerboard.'
- There are the easy way to update the kernel via the tool
 - Raspberry Pi has 'rpi-update' to update the latest kernel. but almost can be done with 'dist-upgrade' to update the fixable kernel.

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2

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af746a1 on 26 Mar

[1 contributor](#)

57 lines (50 sloc) | 2.16 KB

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```
1  Install rockchip image for Tinkerboard with patch
2
3  1)Compile kernel as debian_kernel
4  cd rk-linux/kernel$
5  patch -p1 < rk_kernel_tinker_wlan_bt.diff
6  make ARCH=arm miniarm-rk3288_defconfig -j16
7  make zImage ARCH=arm CROSS_COMPILE=arm-linux-gnueabihf- -j16
8  make modules ARCH=arm CROSS_COMPILE=arm-linux-gnueabihf- -j16
9  make ARCH=arm rk3288-miniarm.dtb CROSS_COMPILE=arm-linux-gnueabihf- -j16
10 make dtbs CFLAGS=-g ARCH=arm CROSS_COMPILE=arm-linux-gnueabihf- -j16
11
12 2)Make system.img as rockchip wiki instruction
13 build/mk-kernel.sh rk3288-miniarm
14 build/mk-image.sh -c rk3288 -t boot
15 cd cd ../rootfs/
16 sudo apt-get install binfmt-support qemu-user-static
17 sudo dpkg -i ubuntu-build-service/packages/*
18
```



Operating System

is it easy to handle?

*NIXs are almost fine..

- *NIX systems are almost fine.
 - Ubuntu, Debian, Arc, Yocto is almost fine
 - UI is getting improved, it is useful for *NIX newbies.
 - Raspberry Pi make a great effort to their Raspbian UI so that Children could use with ease.
- Windows..
 - Windows 10 IoT is..rubbish?..lately I have seen Microsoft do some demonstration for Azure with 10 IoT, they use *NIX edge boards..
 - Hopefully Microsoft would make a great effort to port full-Windows 10 to the (ARM) boards..



Windows Deployment Advanced

Use this section to install **Windows 10 ARM64** into your Raspberry Pi.

DRIVE SELECTION

Please, select the **drive** where you want to deploy Windows 10 ARM64. This is, the **Micro SD** card from your Raspberry Pi.



4: SanDisk Extreme - 58,43

REFRESH

WINDOWS IMAGE (.WIM)

Please, specify the Windows Image file (.wim) you wish to deploy.

C:\Users\yube\Desktop\install.wim

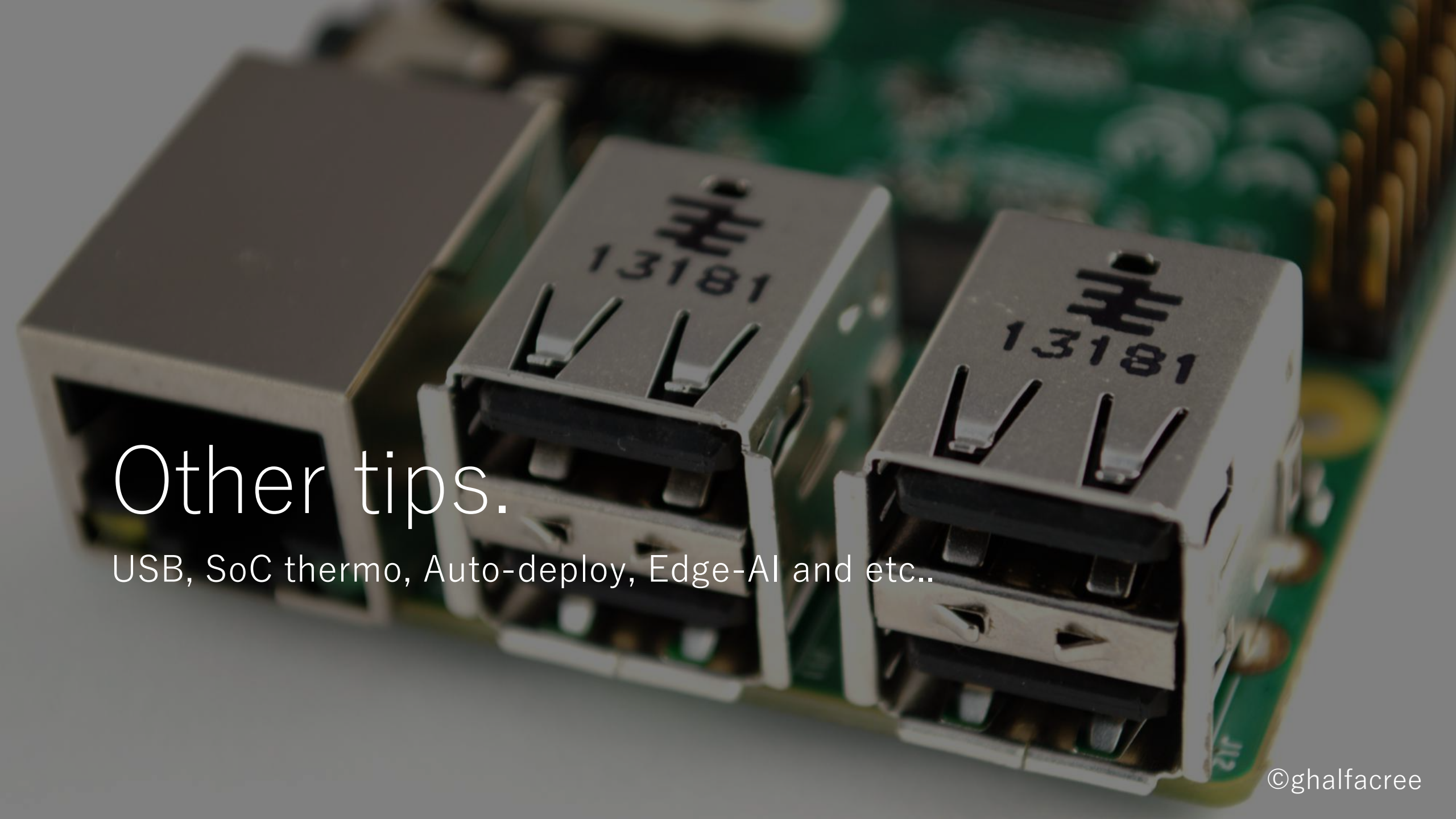
BROWSE...

1 Windows 10 Pro build 17713

Deploy



It is still under 'unofficial'



Other tips.

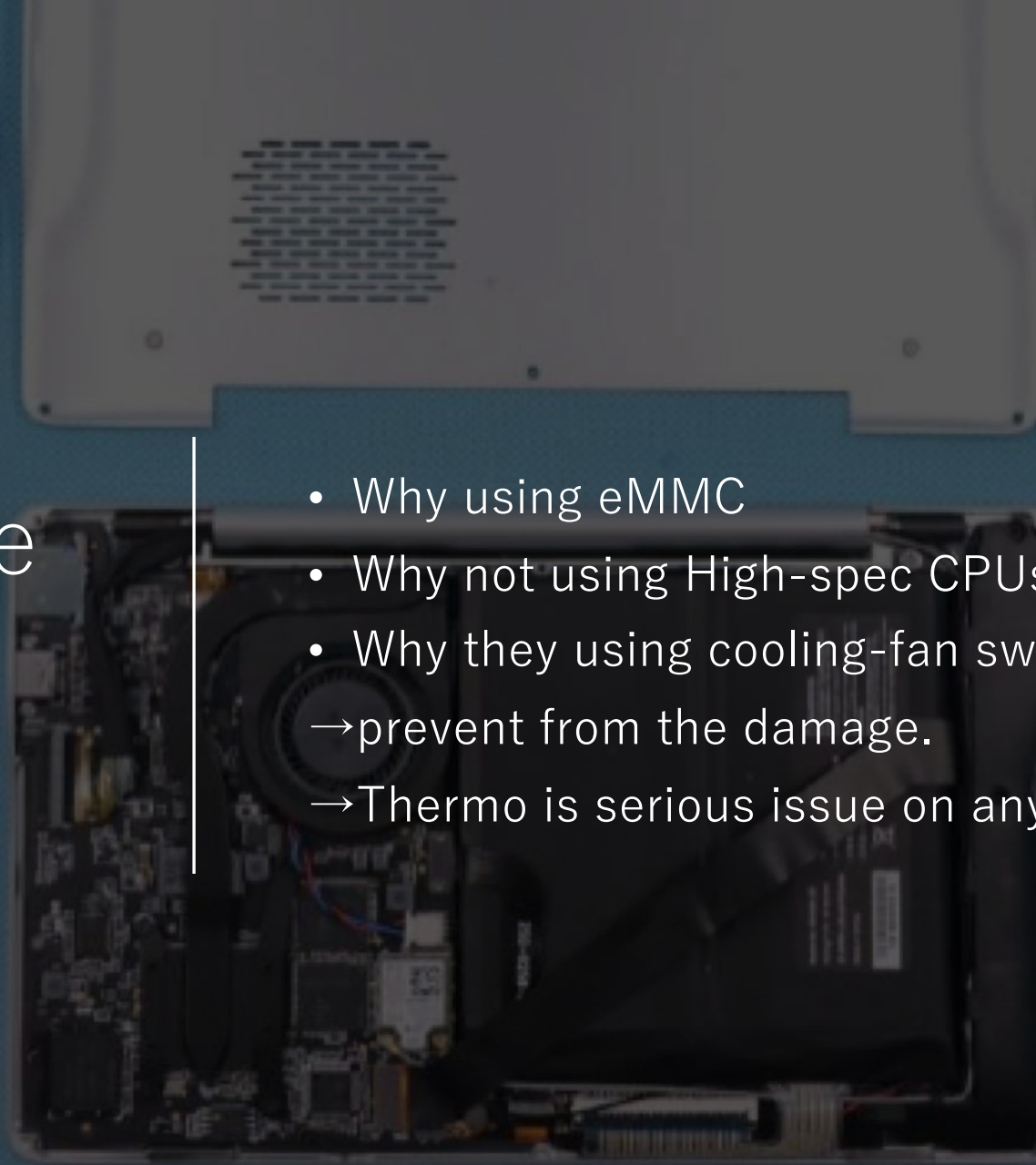
USB, SoC thermo, Auto-deploy, Edge-AI and etc..

Q&A tips

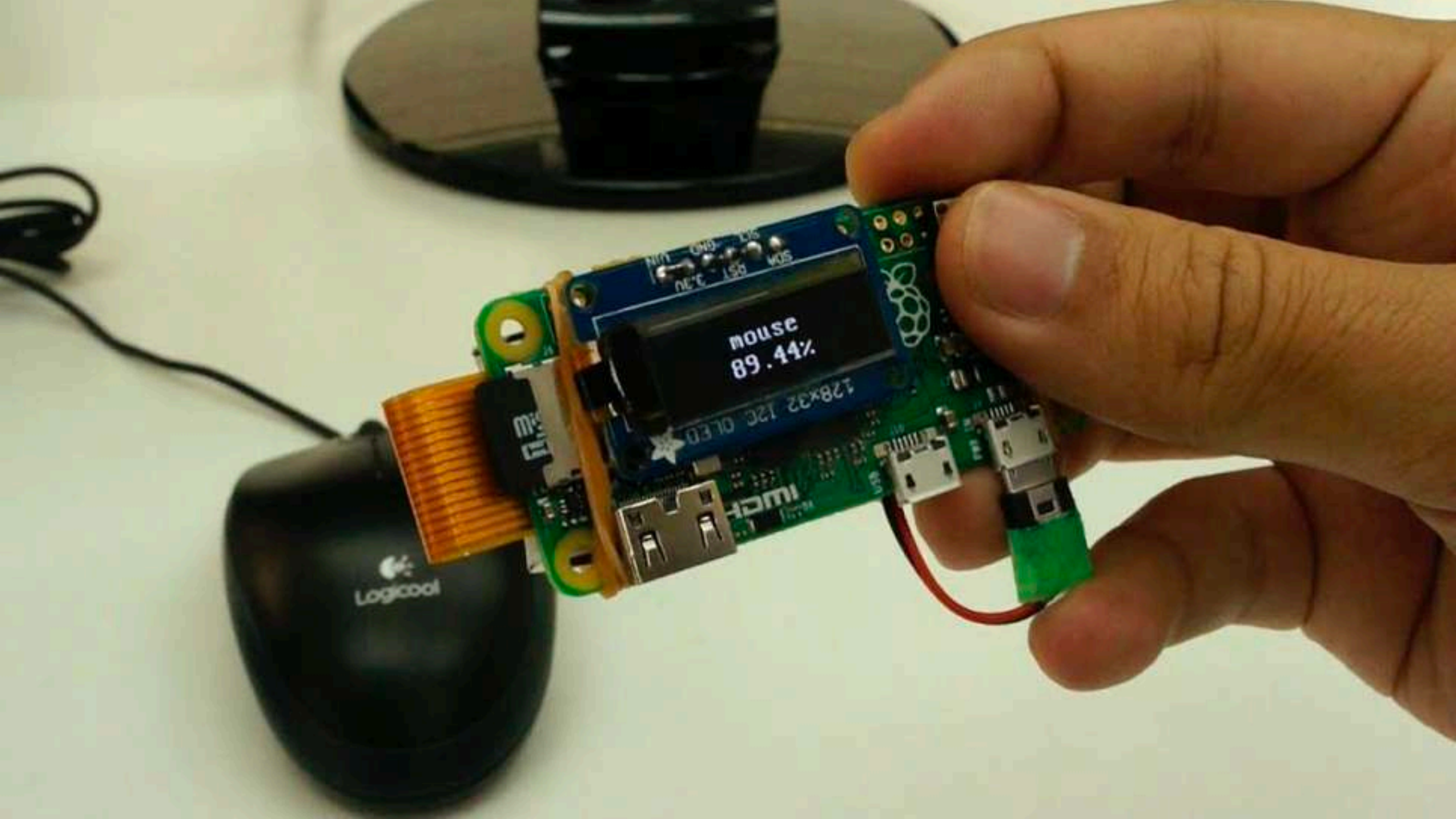
- Plugging USB to the board it suddenly reboots and cannot boot/reboot again and again/ finish booting..
 - Check your voltage/ampere is enough to work with (seriously)
 - Power regulators on the boards are now improved to prevent such issues.
 - Wifi/BT stuff(dongle, PCIe Cards) eat more ampere.
- Would you recommend heatsink/fan for latest SoC on the boards?
 - Yes, latest A72 or later gets really hot thus recommend heatsink/fan
 - It might be needed liquid cooling immersion in the future..

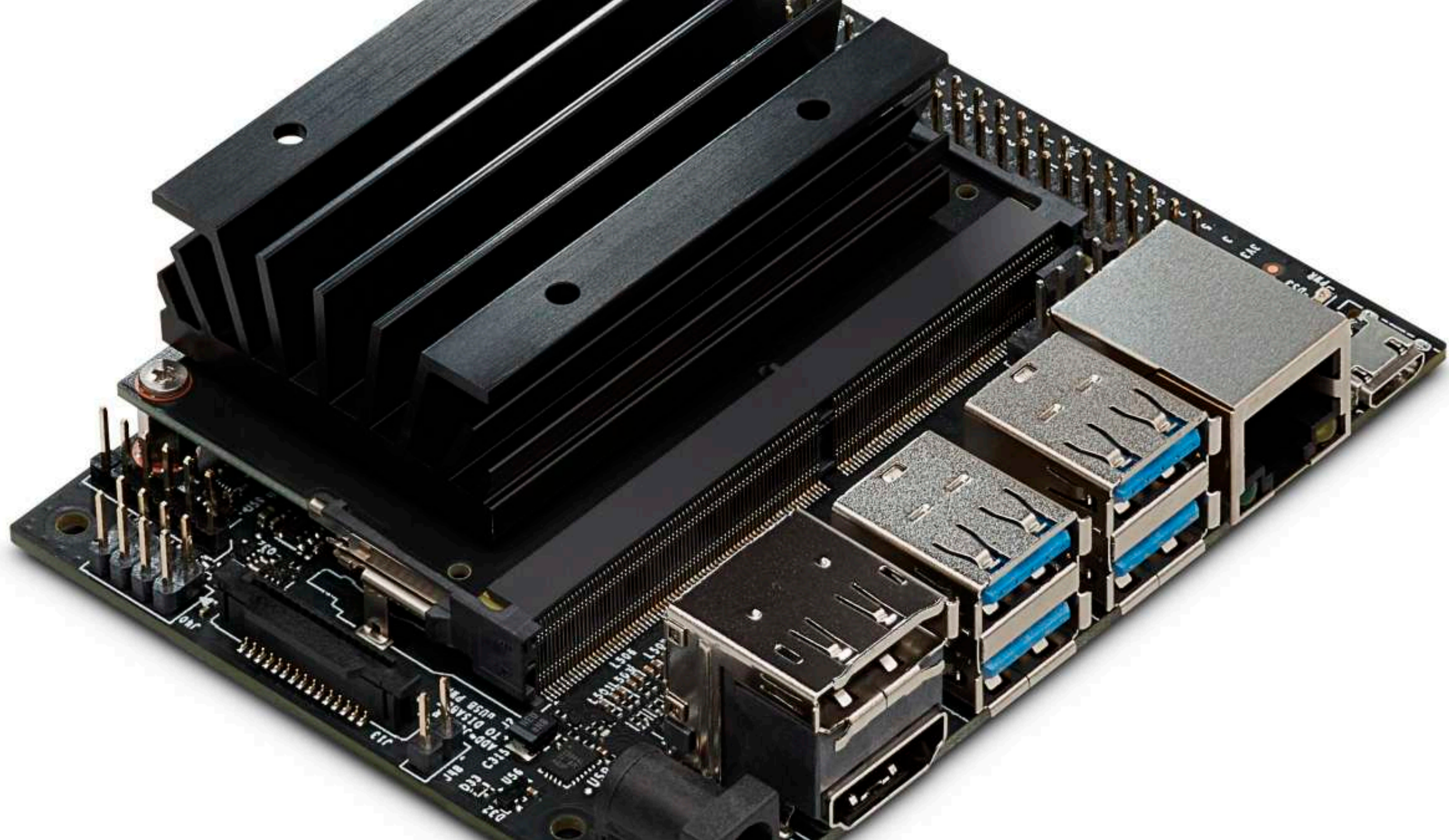
Why they use
on their
UMPC is..


- Why using eMMC
- Why not using High-spec CPUs..
- Why they using cooling-fan switch
 - prevent from the damage.
 - Thermo is serious issue on any PCs











Use cases at Enterprise companies

Opportunities, how to use, how to manage



Pivot to industry

- Such boards still sales mostly to ‘hobbyists’
 - still mainly sell to DIY makers
- Low-cost, robust, programmable
 - Good for toys, good for industry
 - Good for prototyping use for industry
- First industrial sales for Raspberry Pi mid-2013
 - First-party installations
 - Integration into products
- Volume forces quality
 - No room for error





発車ご案内

只今の時刻
15:52

← 企救丘^{ゆき}
for Kikugaoka

先発
1st 15:57

次発
2nd 16:07

小倉^{ゆき}
for Kokura



先発
1st 15:57

次発
2nd 16:07

Lusman
AUDIO OSECHI BOX JU-001

MAIN



Lusman
AUDIO OSECHI BOX JU-002

STORAGE





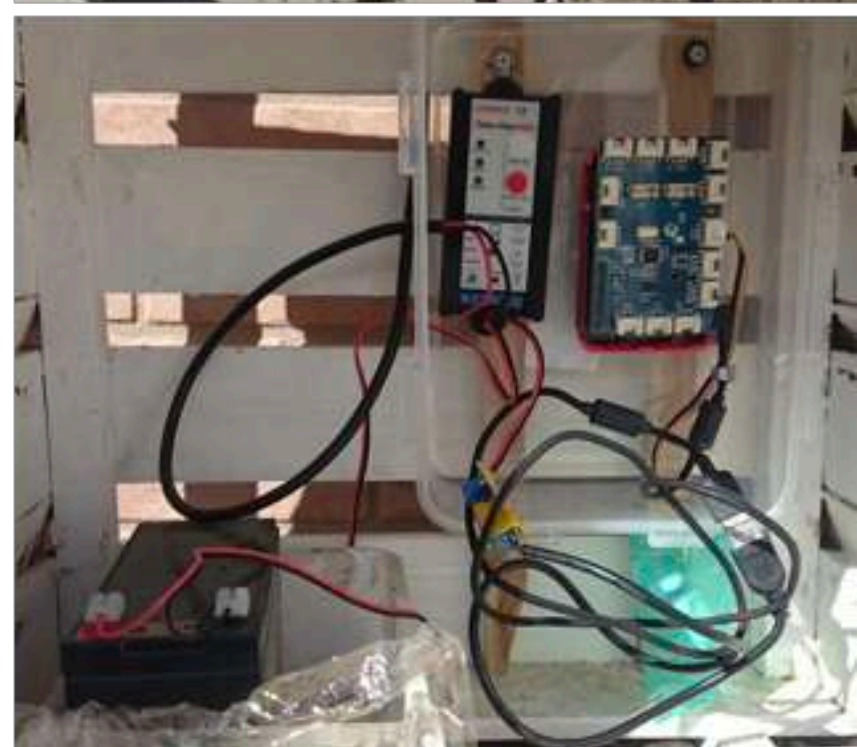
BANK OF THE FUTURE

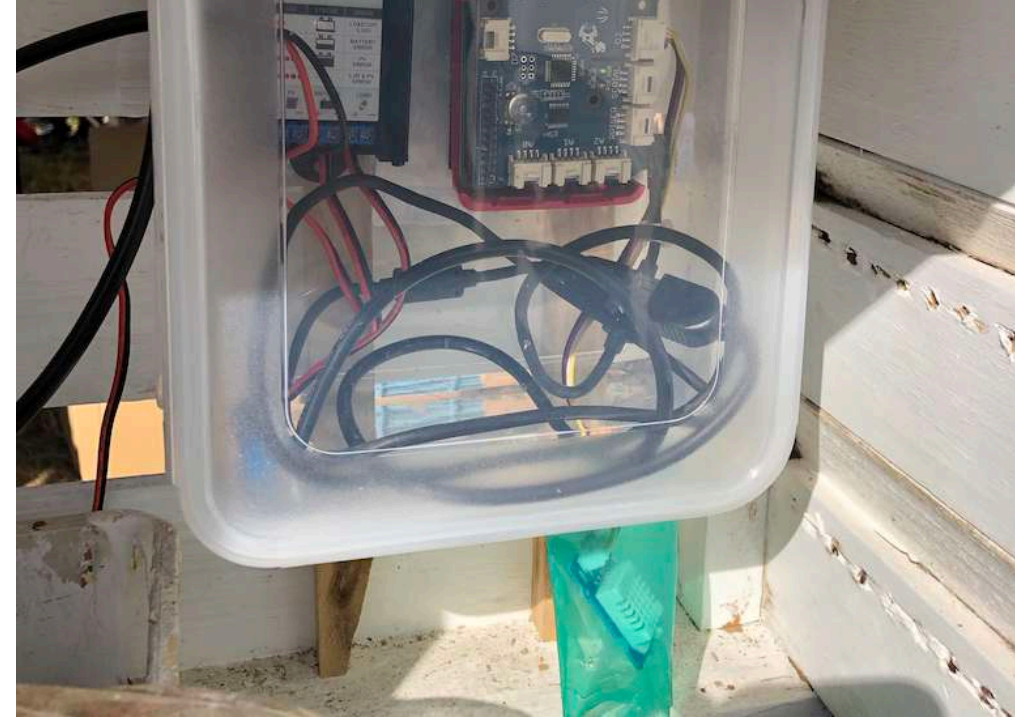
Comfort System

DESIGN SYSTEM



Powered by Raspberry Pi





PM 2.5
"boxes"



1. LASS FT (Field Trial)
3. AirBox

2. LASS4U
4. 87Live

Curriculum.

Courses required:

- Business Core (70 credits)
 - Accounting
 - Economics
 - Analytics
 - Communication & presentations
 - Law
 - Organizational Theory & Behavior
 - Operational Management
 - Finance
 - Marketing
 - Information Technologies
- Public Health Administration (20 credits)
 - Administration & supervision
 - Process improvement
 - Insurance
 - Policies, standards & regulations
 - Human resource
- Information Technology (20 credits)
 - Networking
 - Database
 - System analysis & design
 - Information security management
 - **Health information technology**
- Internship or cooperative education (5 credits)

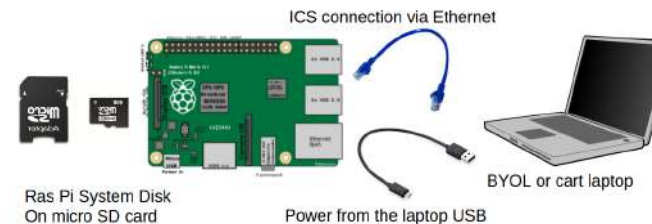
Features:

- AACSB International accredited.
- Goal: IT management in healthcare industries.
- Close relation with local industries.
 - Hospitals
 - Related services (medical images such as Inland Imaging, speech recognition such as NextIT, etc.)

Hands-on materials.

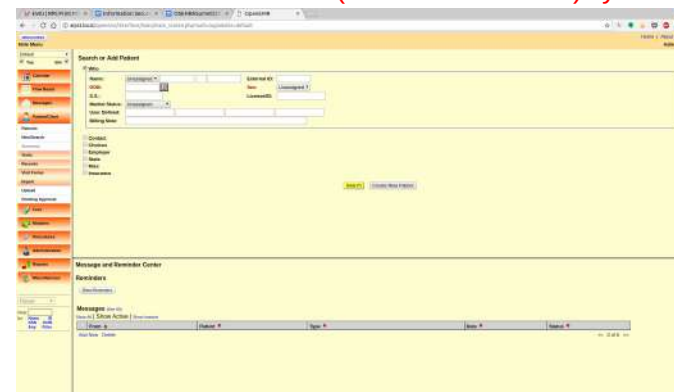
Raspberry Pi -- open source hardware.

- **Raspbian OS** on Raspberry Pi 3.
 - (Optional) Raspberry Pi zero+USB only.
- Internet Connection Sharing (via direct wiring).
 - (Optional) WiFi AP+an Internet router.
- USB power supply.
- MicroSD as a disk.



OpenEMR -- open source web-based EHR.

- ONC certified complete EHR (2014 edition).
- Easy installation from the Internet -- LAMP.
- **Full access to the (actual -- not virtual) system**



Students

- install and configure the server.
- generate mock medical records and users.
 - (optional) **phpmyadmin**

Simulated healthcare practice.

A small group to play a skit.

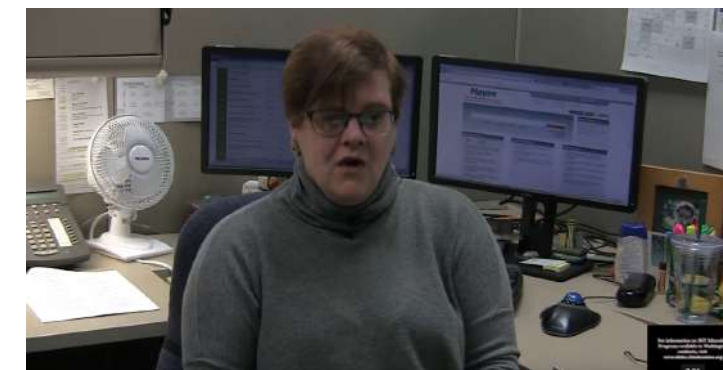
- Nurse triage (picture below)
- Clark -- scheduling, check-in, etc.
- Billing and accounting
- Lab -- ECG, EEG, using other IoT devices
- Medical imaging (radiology)



AND/OR

A small group to develop a video of expertise in health information technologies (WHIEC Expert Series).

- Interview
- Panel





Thank you!

Masafumi Ohta

<mailto:masafumi@pid0.org> [tweet:@masafumiohta](https://twitter.com/masafumiohta)