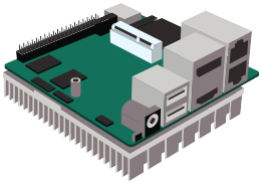
# UP2 Robomaker Pro Kit
## Quick users guide

The UP Squared Robomaker Pro kit is the first robotics kit in production which bridges the gap between the virtual testing environment and the field. The deep integration of the hardware with Amazon RoboMaker delivers an unprecedented experience to the developer speeding up the time to production.

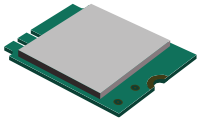
# What's in your kit



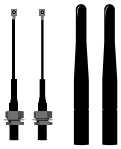
UP Squared board
Ubuntu 18.04 OS &
OpenVINO™ Tool Kit

Real Sense Camera(D435i)

UP AI Core X with heatsink



Wi-fi module



Wi-Fi Antenna kit

Motor module
Motor control board, Motor,
Wheels, Mechanical Parts

Spacers
To fix UP Squared

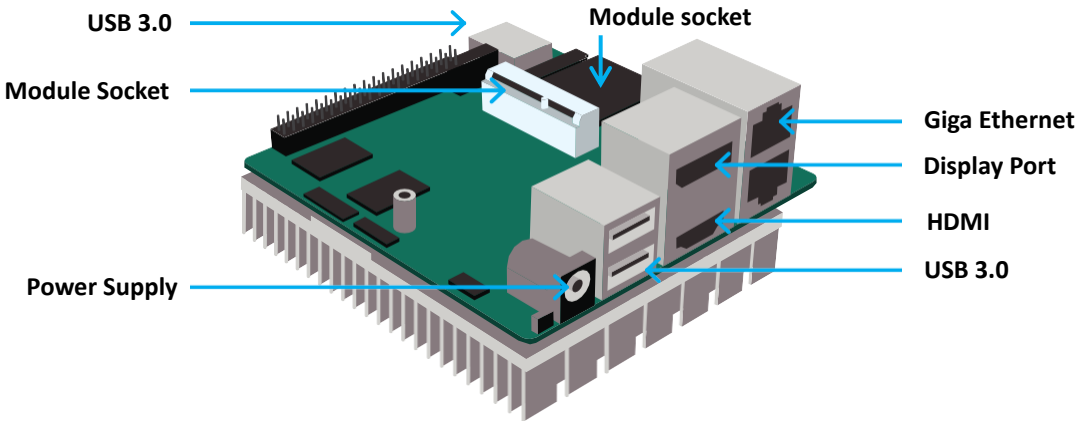
M3 Screws
To fix Intel Real Sense Camera

You'll need the following, not included:

- A monitor with either HDMI or DisplayPort
- USB keyboard and mouse
- Ethernet cable (or optional Wi-fi)

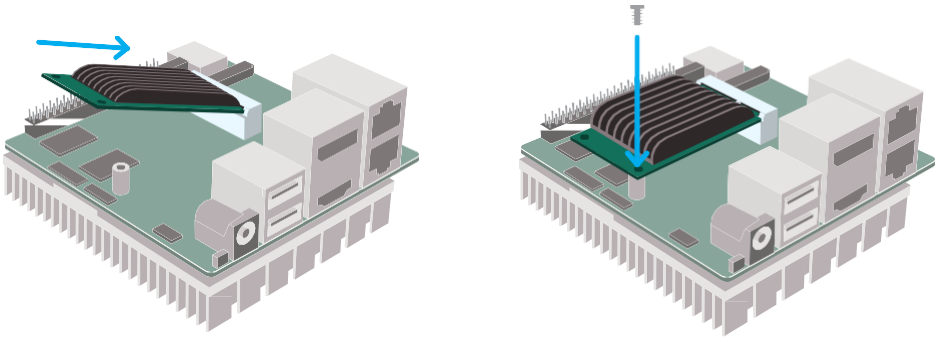
For more information about your UP board, software, accessories and peripherals, please visit
www.up-community.org

# 1 Your UP Squared board

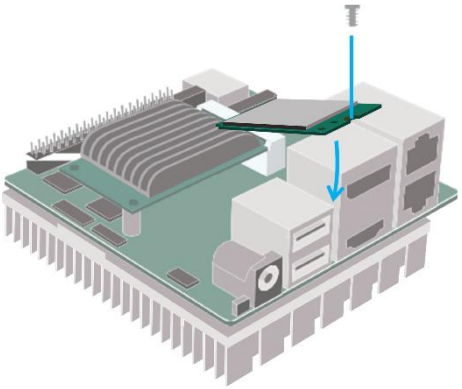



# 2 Install the AI Core X & WiFi module

AI Core X module

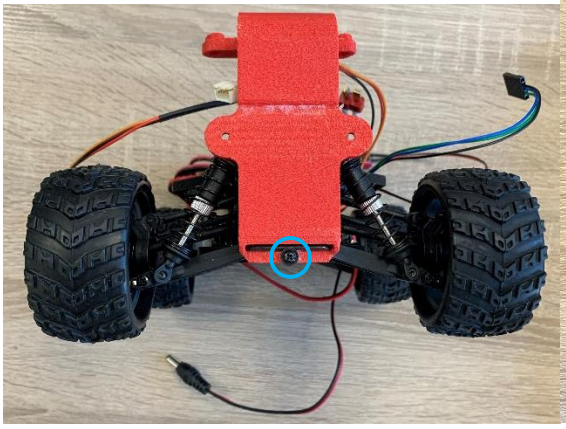


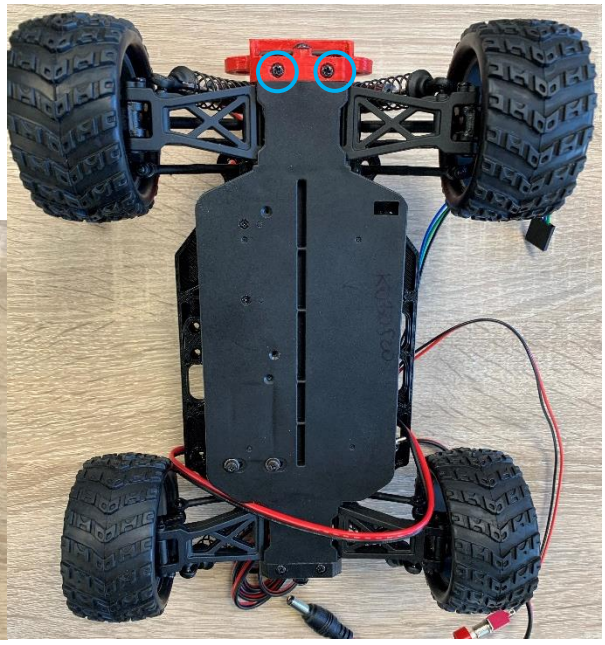
WiFi Module



# 3 Install Intel RealSense Camera to Motor Module

i. Remove the screws indicated in blude circle.



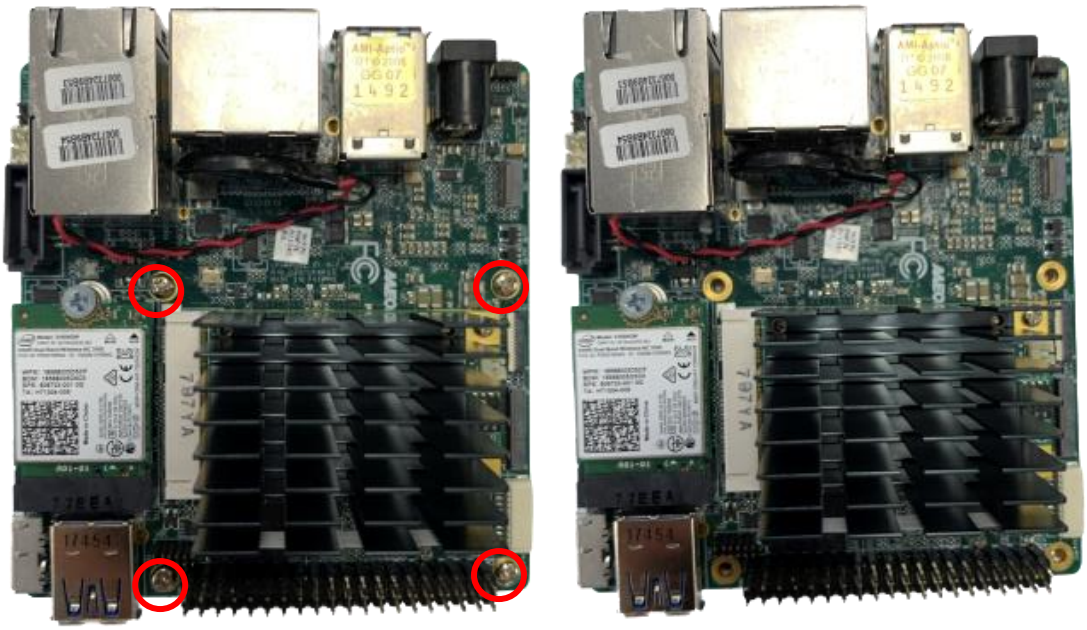


ii. Take out the red plastic and install Intel Real Sense Camera with the m3 screws.

iii. Put the red plastic part and screws back.

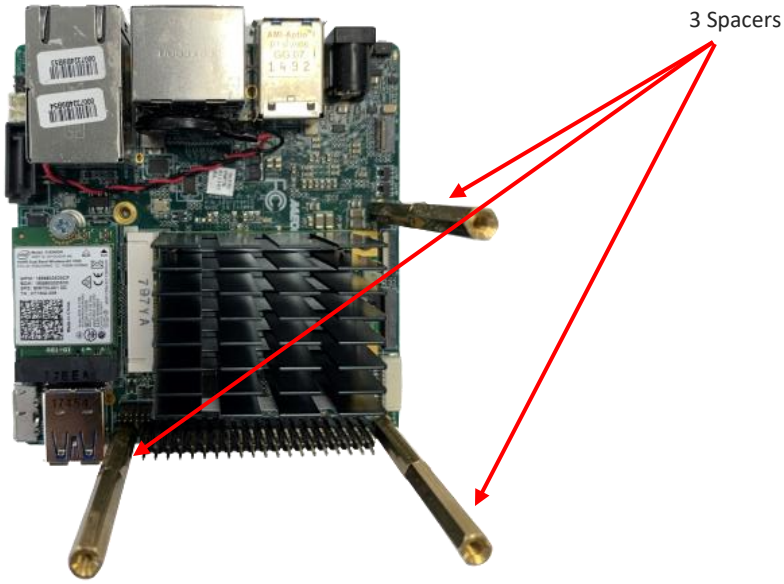
# 4 Assemble Robomaker Pro Kit

1. Remove the 4 Screws

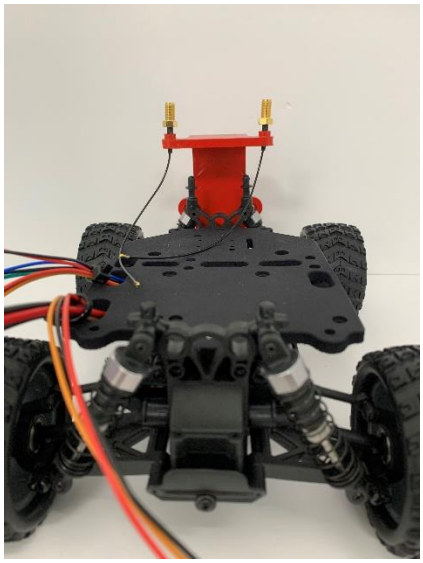


2. Remove 4 screws on top of spacers

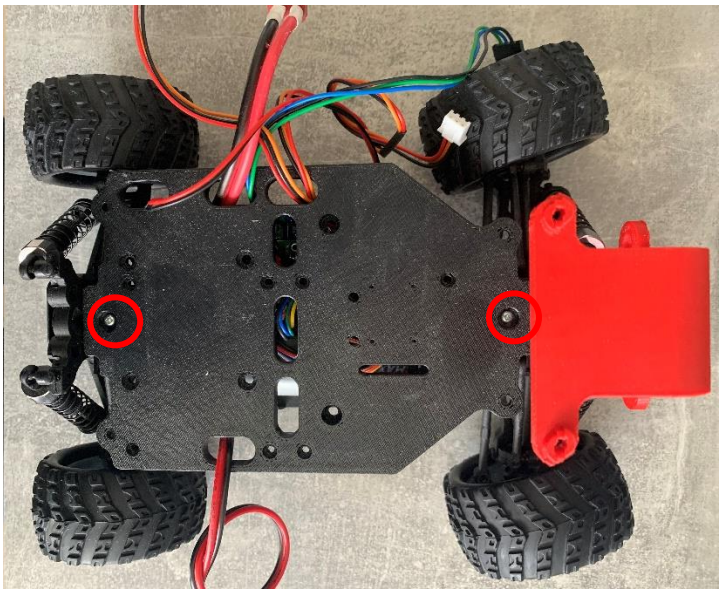
3. Use 3 spacers to fix the cooler as below photo indicated.



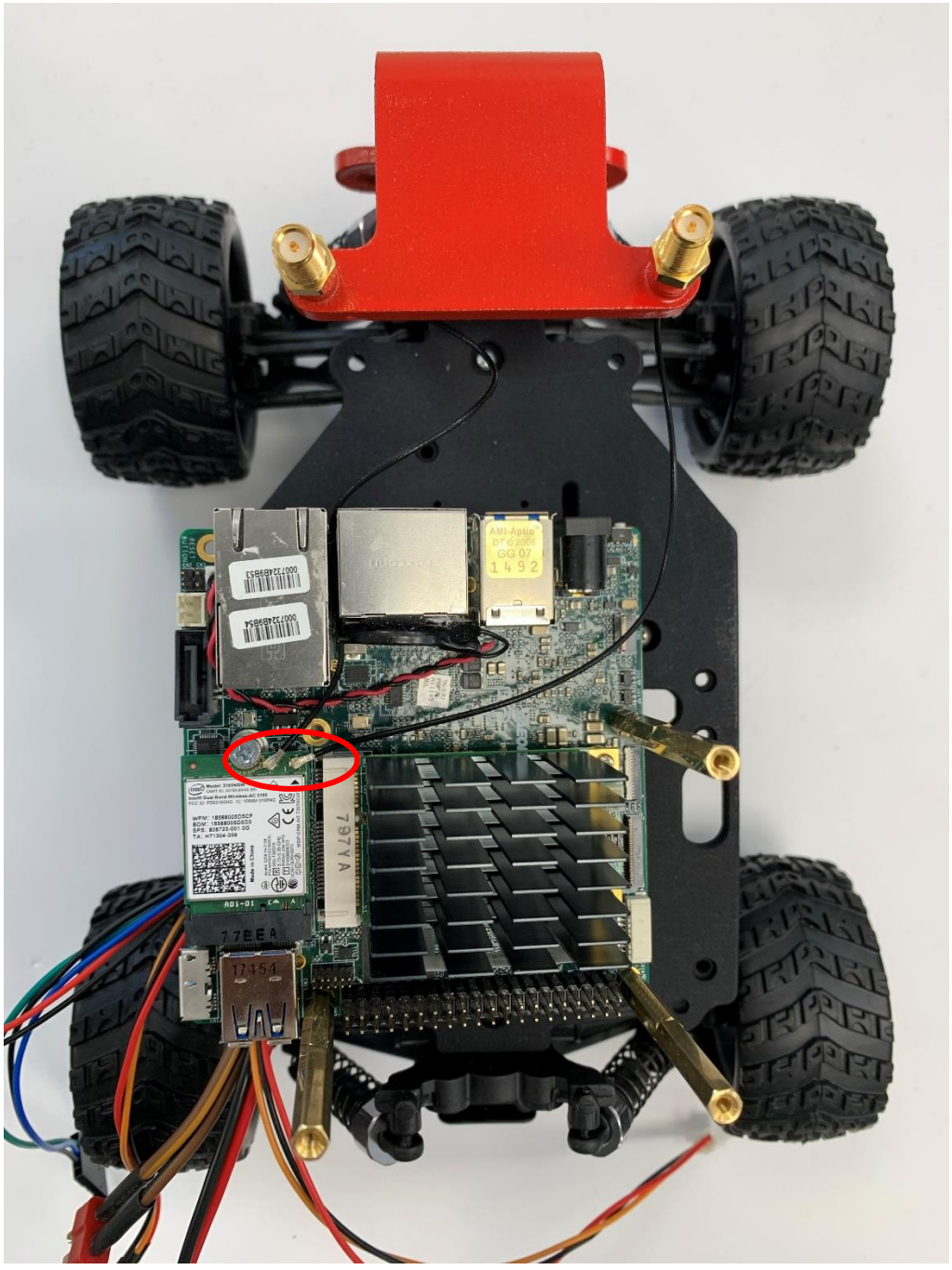
4. Put Antenna cable through the holes on the red bumper of motor module (fix with pressure)



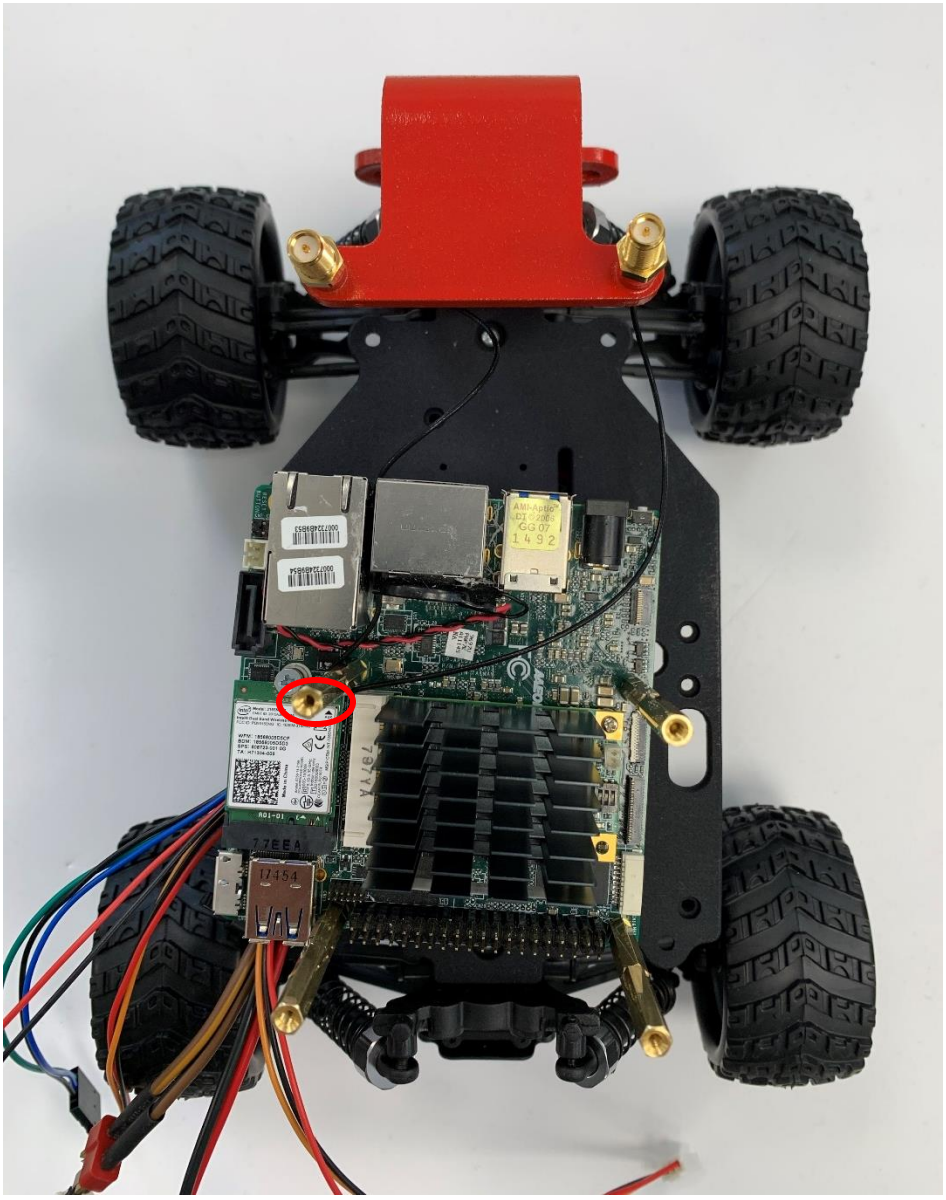
5. Remove 2 screws on top of plastic plate



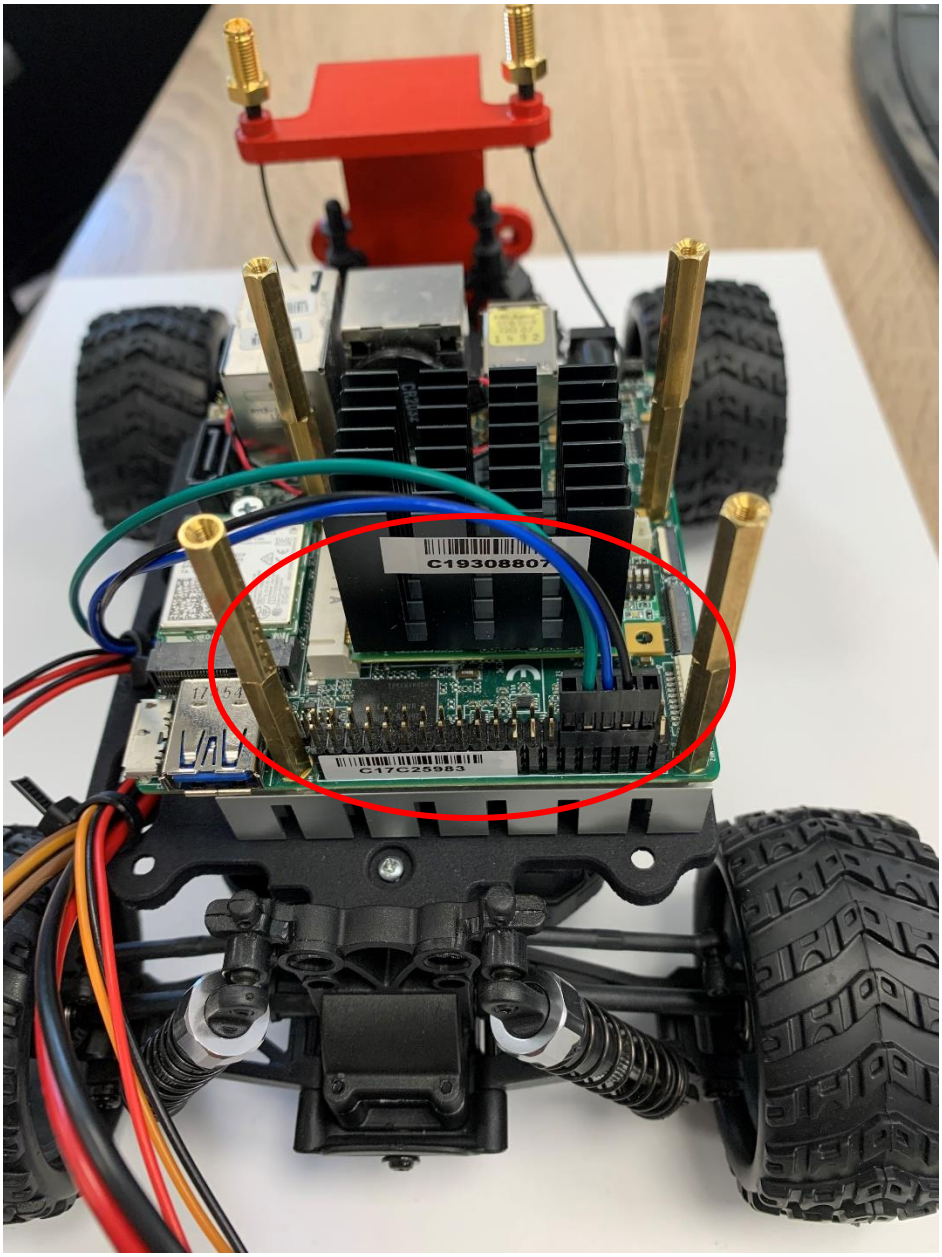
6. Assemble Antenna cable



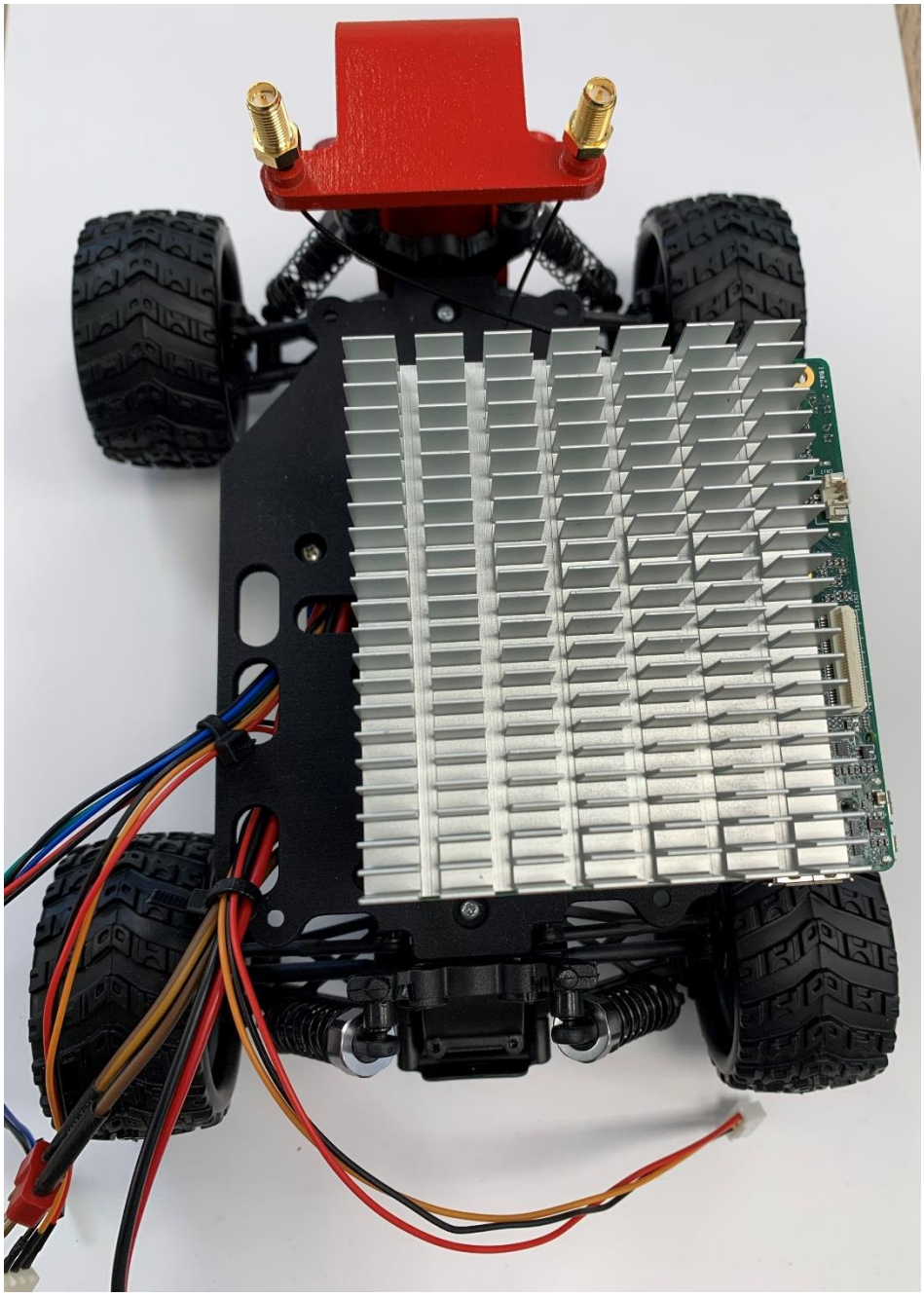
7. Put back the 4th spacer after antenna cable assembling.

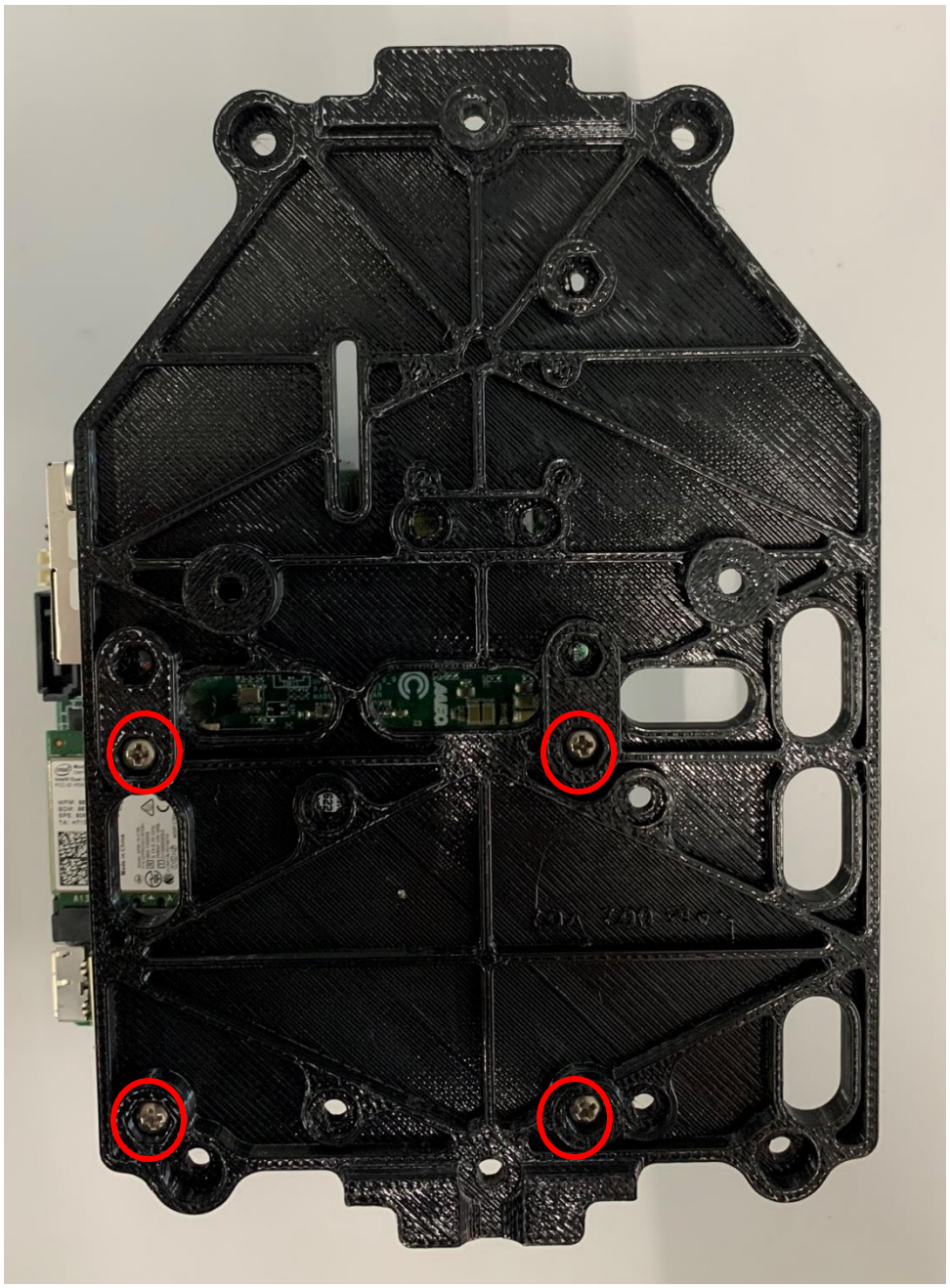


8. Connect TX/RX cable to GPIO ports of UP Squared.

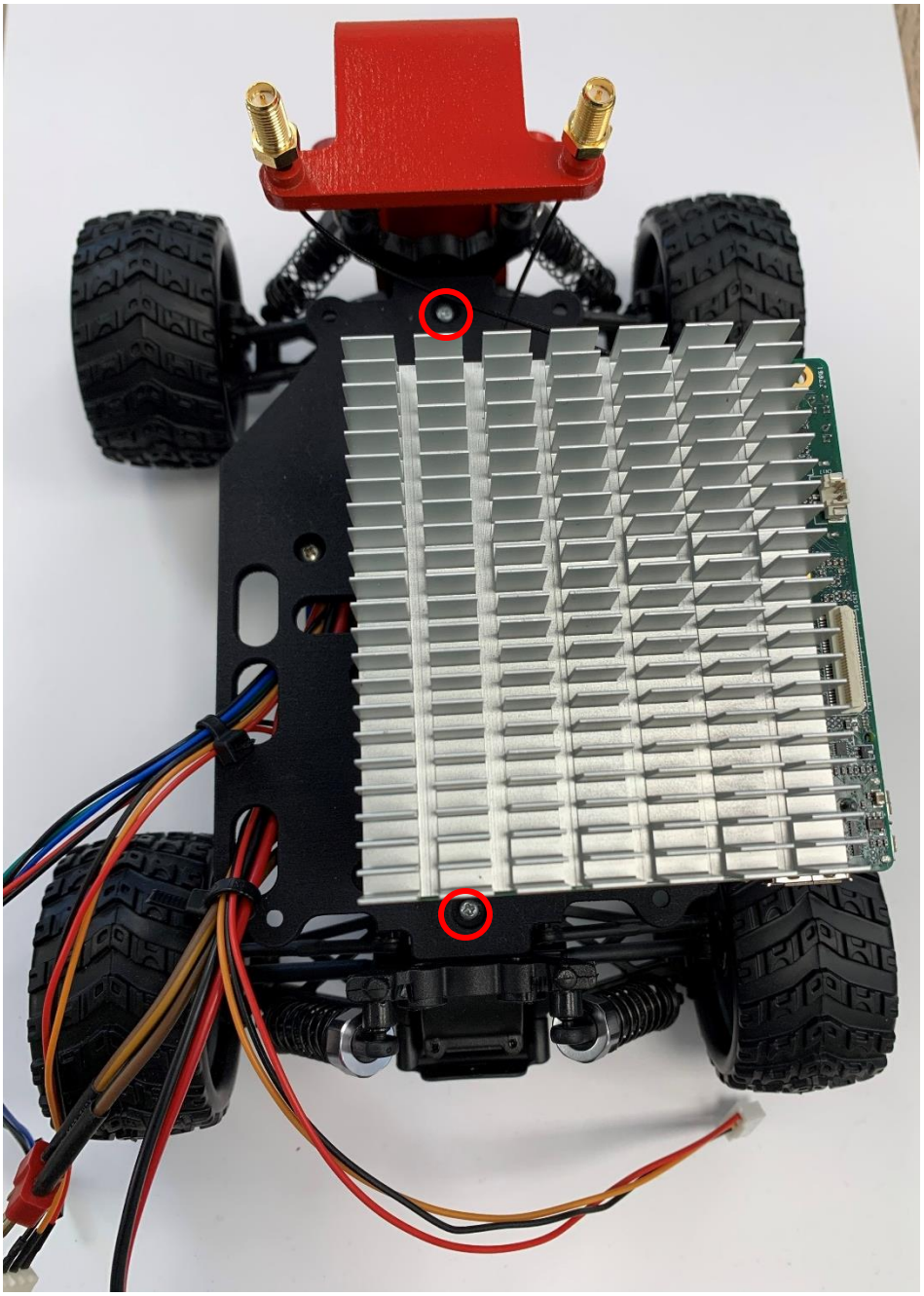


9. Put Up Squared on top of mechanical plate and use 4 screws you removed from copper pillars to fix UP Squared

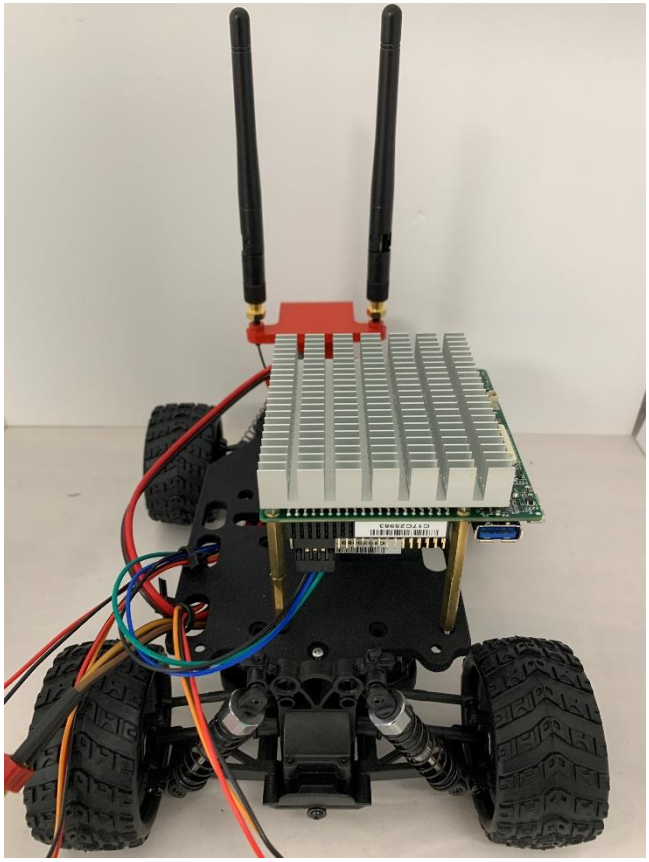




10. Put back the plastic plate and screws to fix the mechanical plate to motor module



11. Install Antennas



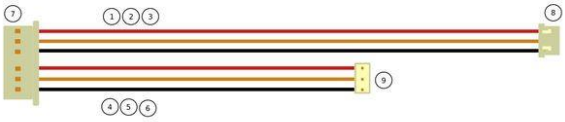
# 5 Power on

Please view following chart for connectivity overview.

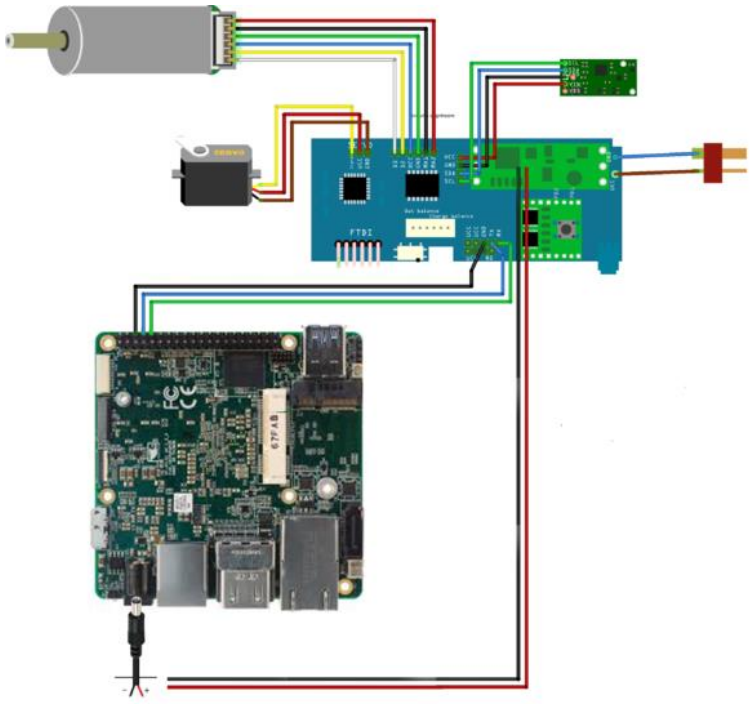
1. Make sure to connect monitor before powering up – if the board is powered up before connecting a monitor, you may need to power cycle the board to see the display
2. Connect power supply to the board and click the small buttons of motor control board

Caution: this is a high-performance board and may get hot during operation.

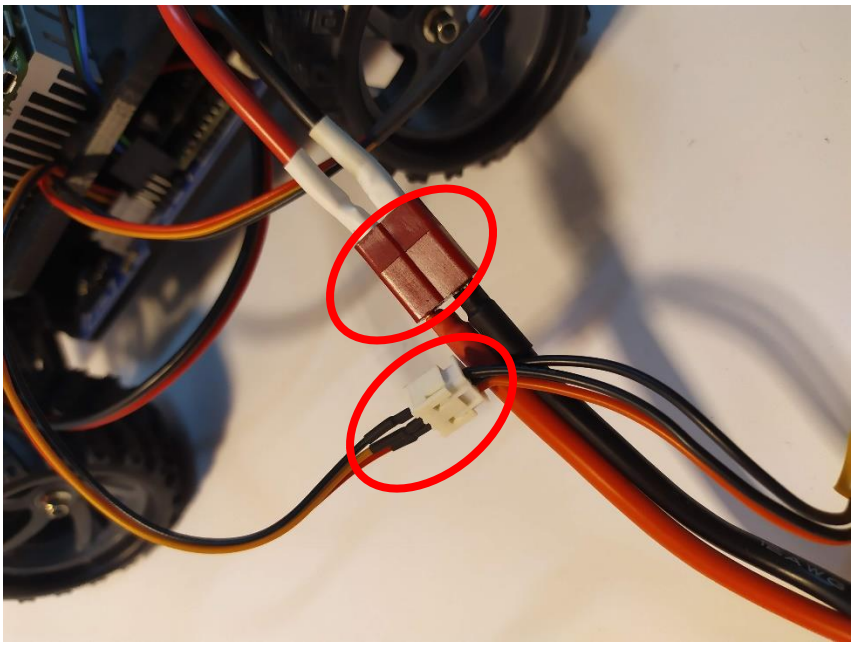
Charger_LLC_battery cable



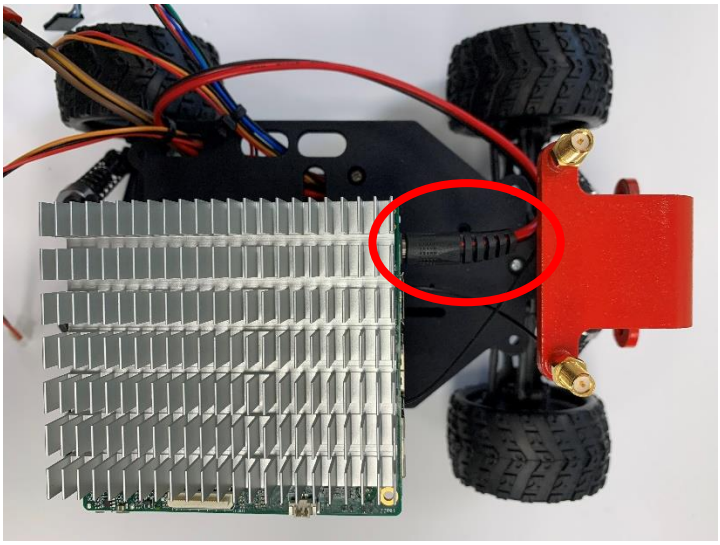

| | | |
|---|---|---|
| 1 | 24 AWG red wire | 30 cm |
| 2 | 24 AWG orange wire | 30 cm |
| 3 | 24 AWG black wire | 30 cm |
| 4 | 24 AWG red wire | 20 cm |
| 5 | 24 AWG orange wire | 20 cm |
| 6 | 24 AWG black wire | 20 cm |
| 7 | JST-XH 2.5 mm – 6 Pin Female Connector | 1 |
| 8 | JST-XH 2.5 mm – 3 Pin plug Female Connector | 1 |
| 9 | JST-XH 2.5 mm – 3 Pin Right-Angle Male Connector | 1 |



I. Port 8 should connect the the Lipo battery balancer (JST connector)
II. Red T connector should connect the LIpo battery



III. Power should be connected through DC connector



# 6 Log in

Log in to your Ubuntu OS with the following credentials:

Username: devkit
Password: devkit

If you have proxy settings set them now: (System Settings > Network > Network Proxy).

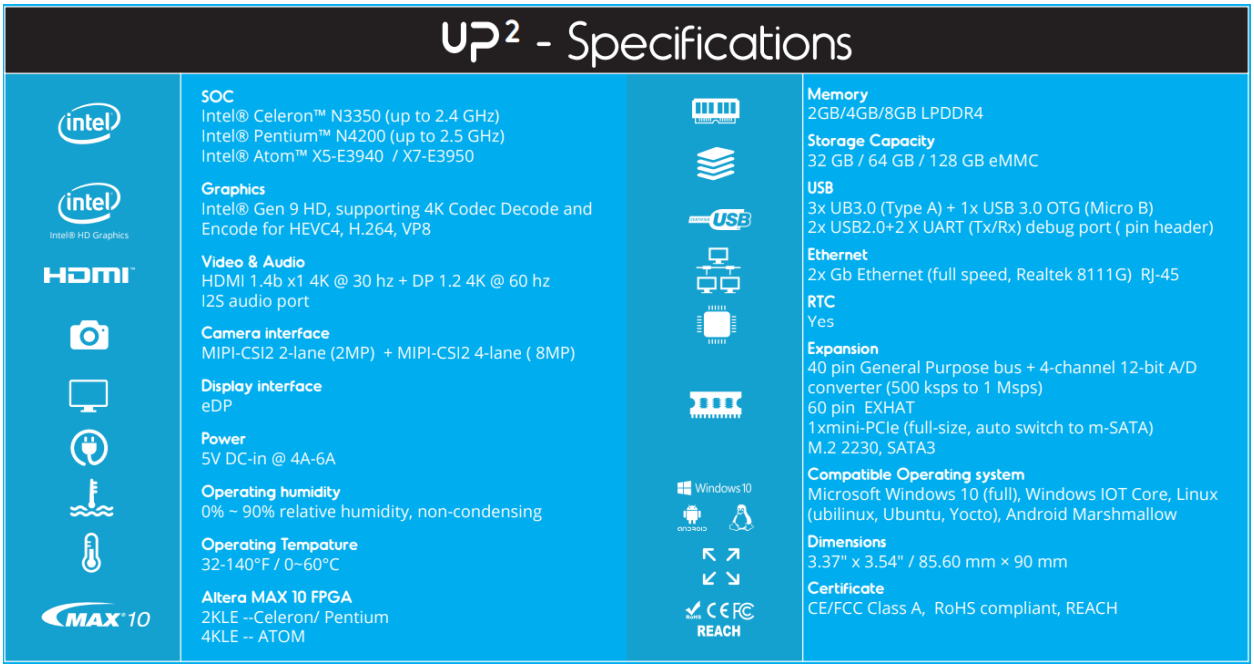
# 7 Get started

Open Cogniteam Wiki website: https://wiki.cogni.io/Category:HamsterProKit.
Follow the instructions there to complete the setup and start your robotic project.

# Safety Precautions

Please read the following safety instructions carefully. It is advised that you keep this manual for future references

1. All cautions and warnings on the device should be noted.
2. Make sure the power source matches the power rating of the device.
3. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
4. Always completely disconnect the power before working on the system's hardware.
5. No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
6. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
7. Always disconnect this device from any power supply before cleaning.
8. While cleaning, use a damp cloth instead of liquid or spray detergents.
9. Make sure the device is installed near a power outlet and is easily accessible.
10. Keep this device away from humidity.
11. Place the device on a solid surface during installation to prevent falls.
12. Do not cover the openings on the device to ensure optimal heat dissipation.
13. Watch out for high temperatures when the system is running.
14. Do not touch the heat sink or heat spreader when the system is running
15. Never pour any liquid into the openings. This could cause fire or electric shock.
16. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.
17. If any of the following situations arises, please the contact our service personnel:
    I. Damaged power cord or plug
    II. Liquid intrusion to the device
    III. Exposure to moisture
    IV. Device is not working as expected or in a manner as described in this manual
    V. The device is dropped or damaged
    VI. Any obvious signs of damage displayed on the device
18. **DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE Following Table) TO PREVENT DAMAGE.**




# FCC Statement

This device complies with Part 15 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.

**Caution:** There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.

**Attention:** Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte. Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

# China RoHS Requirements (CN)

产品中有毒有害物质或元素名称及含量
AAEON Main Board/ Daughter Board/ Backplane

| 部件名称 | 有毒有害物质或元素 | | | | | |
|---|---|---|---|---|---|---|
| | 铅 (Pb) | 汞 (Hg) | 镉 (Cd) | 六价铬 (Cr(VI)) | 多溴联苯 (PBB) | 多溴二苯醚 (PBDE) |
| 印刷电路板及其电子组件 | O | O | O | O | O | O |
| 外部信号连接器及线材 | O | O | O | O | O | O |

O：表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T 11363-2006 标准规定的限量要求以下。

X：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006 标准规定的限量要求。

备注：此产品所标示之环保使用期限，系指在一般正常使用状况下。

# China RoHS Requirements (CN)

Poisonous or Hazardous Substances or Elements in Products
AAEON Main Board/ Daughter Board/ Backplane

| Component | Poisonous or Hazardous Substances or Elements | | | | | |
|---|---|---|---|---|---|---|
| | Lead (Pb) | Mercury (Hg) | Cadmium (Cd) | Hexavalent Chromium (Cr(VI)) | Polybrominated Biphenyls (PBB) | Polybrominated Diphenyl Ethers (PBDE) |
| PCB & Other Components | O | O | O | O | O | o |
| Wires & Connectors for External Connections | O | O | O | O | O | O |

O: The quantity of poisonous or hazardous substances or elements found in each of the component's parts is below the SJ/T 11363-2006-stipulated requirement.

X: The quantity of poisonous or hazardous substances or elements found in at least one of the component's parts is beyond the SJ/T 11363-2006-stipulated requirement.

**Note: The Environment Friendly Use Period as labeled on this product is applicable under normal usage only**