



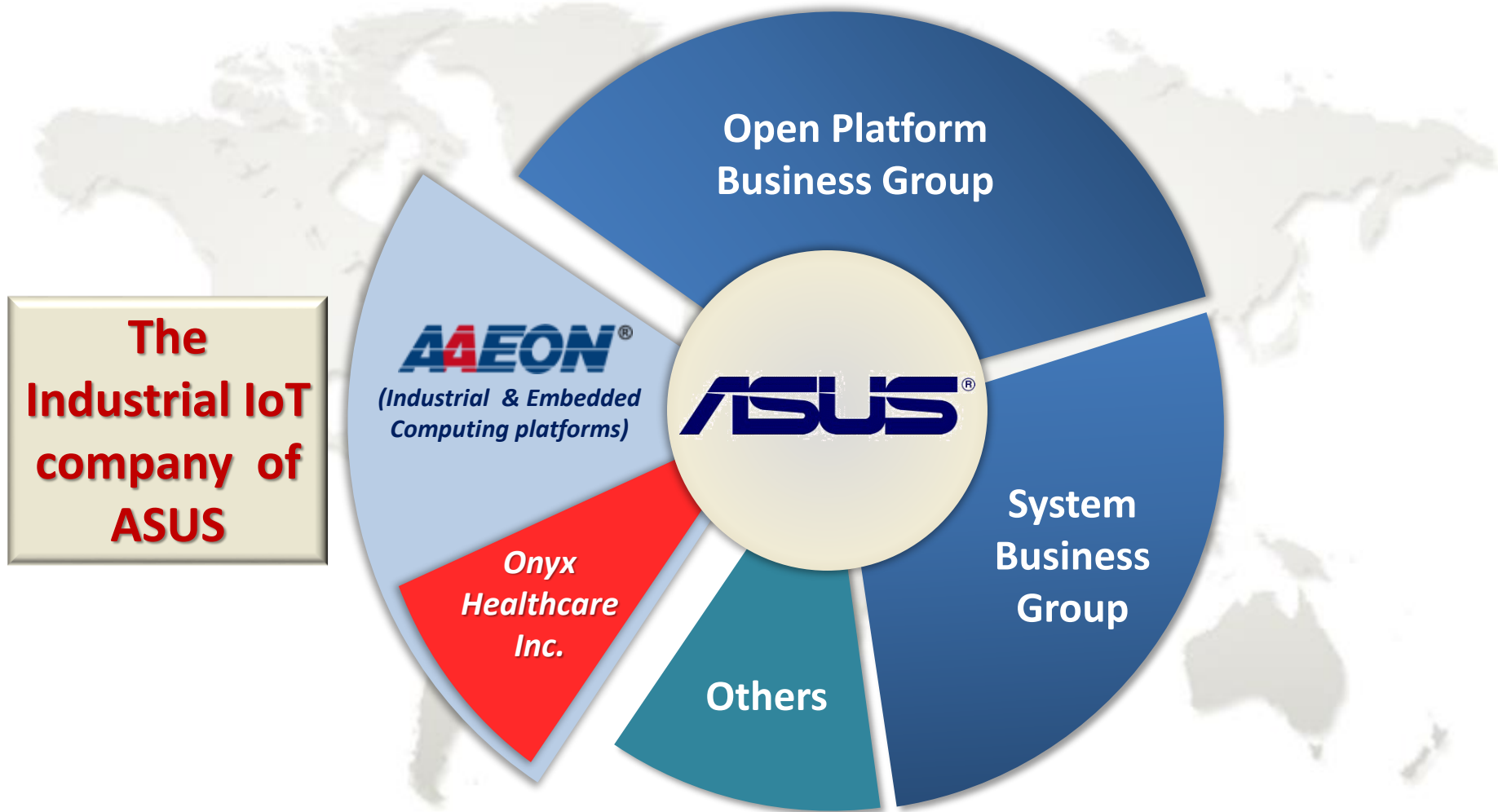
# AAEON IQRF Solution : From prototype to real world

*AAEON @ IQRF 2017 Summit, Prague*

Presenters : Fabrizio Del Maffeo, Managing Director AAEON Europe & UP Founder  
Marco Barbato, Product & Technical Director, AAEON Europe

# ASUS<sup>®</sup> Group

**A4EON<sup>®</sup>**  
an ASUS<sup>®</sup> assoc. co.



# AAEON Worldwide Offices

Headquartered in Taipei, Taiwan, AAEON now has 12 locations worldwide to serve the needs of our global partners



In GREEN “Aaeon Europe” offices

# AAEON Product Divisions

## ECD



3.5", 5", PC-104 SBCs  
COM  
Carrier ODM  
PICMG SBCs



## ISD



Firewall  
NVR



## SPD



Embedded  
Box PC  
HMI/Panel PC  
Industrial display  
Rack mount  
IPC



## IPCBU



Industrial  
Mother Board  
(ATX, Mini-ITX, etc.)



## DMS



Industrial PC  
Server  
Storage Server  
ODM



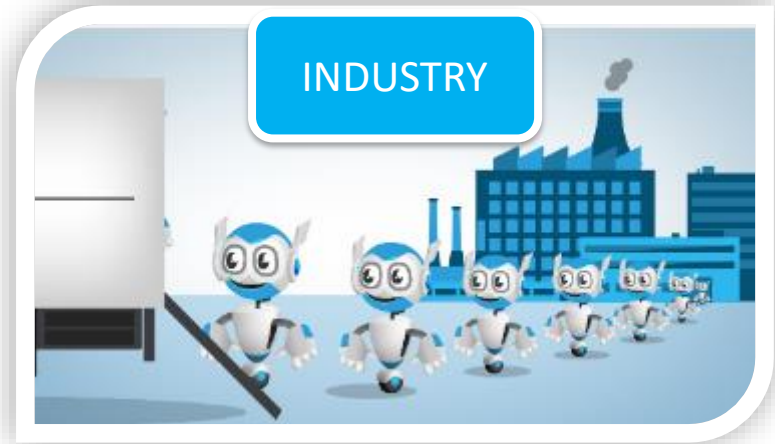
## RMD



Semi-rugged  
& Rugged  
Tablet PC  
Handheld PC



# The Gap – IoT ProMakers Vs Industrial



Cost Effective Solutions

Community Support

Limited Performance

Expensive Solutions

Vendor Support

Wide Range of Performances

No / Limited Customization

Limited Lifecycle

Short Product Development Cycle

Customization

5-7 Yrs Lifecycle

Long Product Development Cycle

Technology Maven

Focus on Prototype

Try, See & Think

Technology Laggard

Focus on Mass Production

Think, Try & See

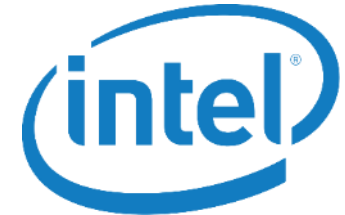
# The Idea



=



+



The Most Popular platform  
for prototyping

The Most Scalable Hardware  
with multi OS Support

+



Industrial Grade Electronic Manufacturing  
Process and Components





# 600+ backers (270 companies backed UP)

KICKSTARTER

Discover

Start a project

About us



Search Projects

## UP - Intel x5-Z8300 board in a Raspberry Pi2 form factor



UP, the credit card computer board for makers powered by Intel Quad Core Atom X5-8300 1.84GHz, running Linux, Windows 10, and Android

Pre-order

Created by  
UP



671 backers pledged €105,117 to help bring this project to life.



[www.up-board.org](http://www.up-board.org)

# UP Community

UPcommunity

[Home](#) [Forum](#) [Downloads](#) [Wiki](#) [Hackathon](#) [Blog](#) [Login/Join](#)



Join our UP Community!  
Share your projects!  
Ask questions, seek support!

**>3000 members**



FORUM

Leave your messages here.



DOWNLOADS

ubinux<sup>™</sup> and other software for UP Board.



HACKATHON

Join the competition!



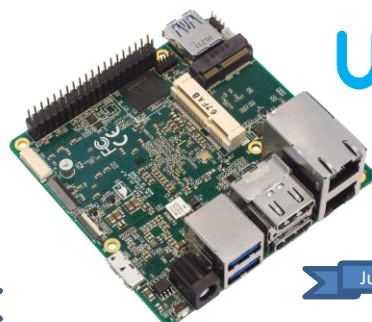
[www.up-board.org](http://www.up-board.org)





UP  
bridge the gap

MP



UP<sup>2</sup>  
bridge the gap

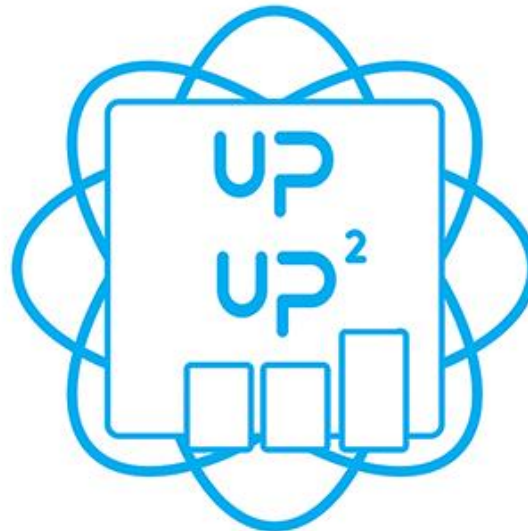
July

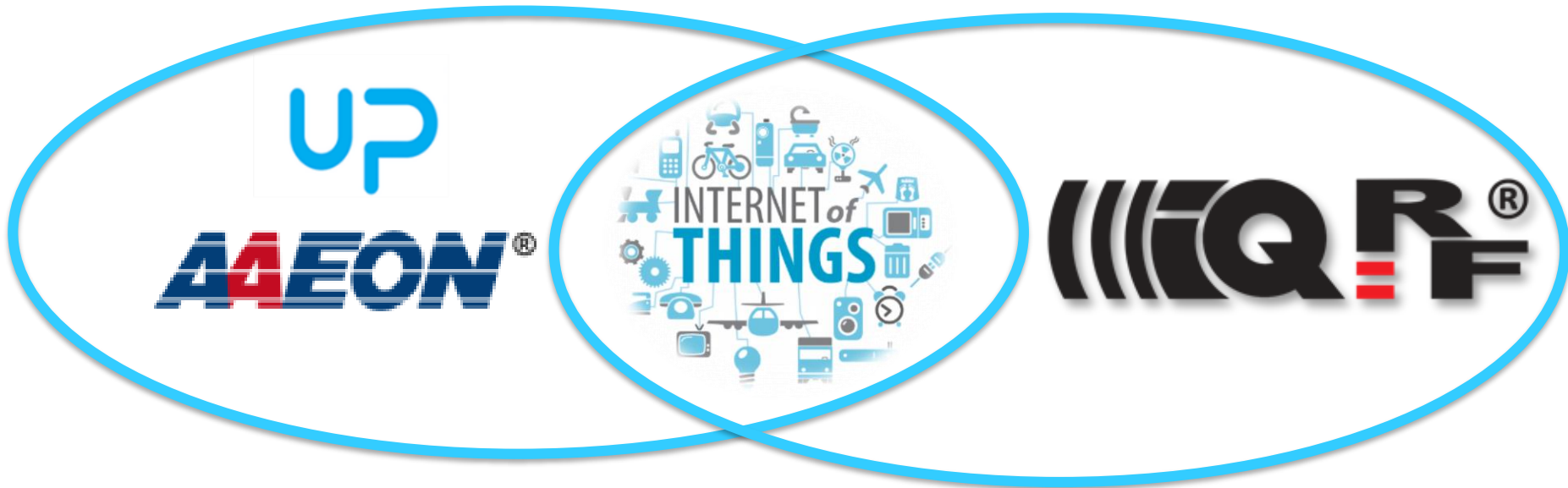


UP  
bridge the gap

Aug

Type	Single board Computer	Single board Computer	Single board Computer + Computer-on-module
Dim.	86.5x56.5mm	86.5x90mm	56.5x66mm
CPU	x5-z8350 (4C) up to 1.92GHZ	x5-ze3940(4C) up to 1.8GHZ N3350 (2C) up to 2.4GHZ N4200 (4C) up to	x5-z8350 (4C) up to 1.92GHZ
RAM	up to 4GB RAM	up to 8GB RAM	up to 4GB RAM
On-board mem.	up to 64GB eMMC	up to 128GB eMMC	up to 64GB eMMC
USB 2.0	4 + 2 from EXHAT	2	2 (pin header)
USB 3.0	1 (OTG)	4( incl. 1x OTG)	1
Expansion	40-pin GP-bus	40-pin GP-bus 60-pin EXHAT mini-PCIe(SATA) M2. 2230 E key	100 pin GP-bus
SATA3	N/A	1	N/A
Video output	1x HDMI 1x MIPI-DSI	1x HDMI + 1x DP 1x eDP	1x HDMI
GbLAN	1	2	N/A
MIPI-CSI	1x 2 lane	1x 2 lane 1x 4 lane	1x 2 lane 1x 4 lane
Graphic	Intel Gen 8 HD 400	Intel Gen 9 HD 500/HD 505	Intel Gen 8 HD 400
OS Support	Windows 10 full , Yocto, Ubuntu, Ubilinux, Android 6.0	Windows 10 full , <a href="#">Windows IoT Core</a> , Yocto, Ubuntu, Ubilinux, Android 6.0	Windows 10 full , Yocto, Ubuntu, Ubilinux, Android 6.0
Longevity	2020	2024	2020







# IoT Starter KIT



UP IQRF®  
IoT Starter Kit

UP with IQRF adapter



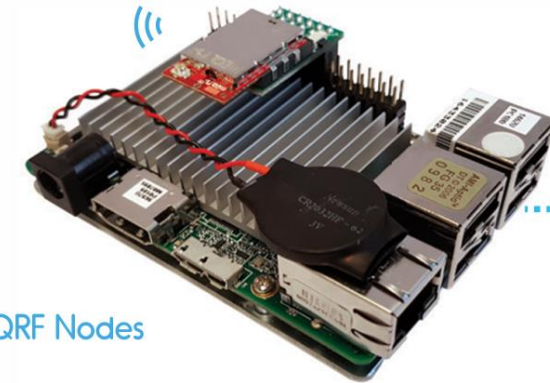
Microsoft Azure

Ready extensions  
[github.com/iqrfsdk](https://github.com/iqrfsdk)



IQRF Router

IQRF Nodes



Sensor kit



Relay kit

SW

- Inteliminds Cloud
- Ubiworx Framework
- Resin Deployment
- RehiveTech Management
- NodeRed Dashboard

[www.iqrf.shop](http://www.iqrf.shop)

HW

- CO<sub>2</sub>, T Sensors
- RH, VOC Sensors
- Wireless Relays
- Power Sockets





# AAEON IoT Gateways offering

Catalogue solutions

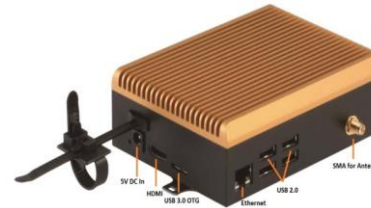
**UP-GWS01**  
Entry level IoT Gateway



MP  
Now



**UP-GWS02**  
IIoT LoRA Gateway & Network Server



MP E/  
June



Solutions concepts  
(available by project)

**AIOT-CHT01**  
High performance Industrial Gateway



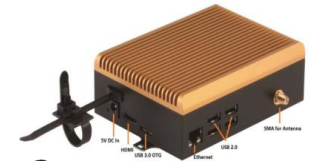
**AIOT-BT01**  
Home thin client



**AIOT-DRM**  
Building automation gateway



**XXXXXX**  
Industrial Automation 3G Gateway





City : Prague  
Month : January  
Average Low Temp : -5.3 Degrees  
Average Snow Days : 12



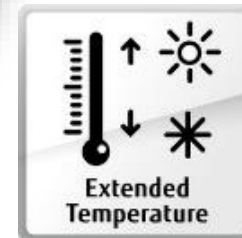


**City : Prague**  
**Month : June**  
**Average Max Temp : 21.4 Degrees**  
**Average Rainy Days : 10**



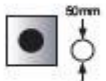

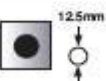

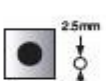











**IQRF<sup>®</sup>**  
**IIoT GATEWAY**



# **AAEON** IP68 IQRF-ready IIoT Gateway

# IP Grade definition

First Digit	Protection against Solid Foreign Objects and Access to Hazardous Parts			Second Digit	Protection against Liquids	
	Illustration	Method	Explanation		Illustration	Method
0	-	Non-protected	Non-protected	0	-	Non-protected
1		Protected against solid foreign objects of 50mm diameter and greater	Protected against access to hazardous parts with the back of a hand	1		Protected against drops of water falling vertically
2		Protected against solid foreign objects of 12.5mm diameter and greater	Protected against access to hazardous parts with a finger	2		Protected against drops of water falling at up to 15° from the vertical
3		Protected against solid foreign objects of 2.5mm diameter and greater	Protected against access to hazardous parts with a tool	3		Protected against spraying water at up to 60° from the vertical
4		Protected against solid foreign objects of 1.0mm diameter and greater	Protected against access to hazardous parts with a wire	4		Protected against splashing water from all directions
5		Dust-protected	Protected against access to hazardous parts with a wire	5		Protected against jet of water from all directions
6		Dust-tight	Protected against access to hazardous parts with a wire	6		Protected against jet of water of similar force to heavy seas
				7		Protected against the effects of immersion
				8		Protected against prolonged effects of immersion under pressure to a specified depth

**IP68**





# UP-GWS03

## IQRF Outdoor IP68 Gateway

IQRF Industrial IoT Gateway for harsh environment powered by Intel Apollo Lake ATOM x5 / x7, a powerful x86 Quad Core capable of high performances edge computing.

It can easily fit outdoor extreme conditions thanks to extended temperature, water and dust proof features.

A broad range of complementary connectivity options is available beside the IQRF Gateway function.



**IQRF**<sup>®</sup>

**Lte**<sup>™</sup>

Predictive  
Maintenance

Outdoor

Edge Computing

Smart Metering

Smart parking  
Smart Agriculture

Extended Temperature

Intel ATOM

WiFi

IIoT

IQRF

IP68

LTE

Water Proof

Harsh environment

Dust proof



# Detailed specifications

<b>CPU</b>	Intel® N3350/N4200 SoC or E3940/E3950
<b>Memory</b>	Onboard 2GB / 4GB / 8 GB LPDDR4 memory
<b>Graphics</b>	Intel® Gen 9 HD, supporting 4K Codec Decode and Encode for HEVC4, H.264, VP8
<b>Storage</b>	Onboard 32 GB / 64 GB / 128 GB eMMC
<b>Ethernet</b>	1 x Realtek RTL8111G Gigabit Ethernet, RJ-45
<b>Audio</b>	1 x HDMI Audio on M12
<b>External I/O Connector</b>	1x RJ45 Connector on M12
	1 x HDMI Connector on M12
	1 x USB 3.0 Connector on M12 (IQRf transceiver antenna solution)
	1X M12 Connector(8PIN RS232)
	1x M12 Connector(3PIN DCIN)
	4x Antenna
<b>3G/mSATA</b>	1 x Mini Card slot (full size) for 3G /mSATA
<b>WIFI/BT</b>	1 x M.2 slot for WIFI/BT module
<b>LORA function</b>	Frequency band 868MHz
<b>Power</b>	5V DC Only
<b>Form Factor</b>	220 mm x 140 mm x 165 mm
<b>Operating Temperature</b>	0-60°C / -20~+70
<b>Operating Humidity</b>	0% ~ 90% relative humidity, non-condensing
<b>Certification</b>	CE Class A, FCC
<b>OS Support</b>	Microsoft Windows 10 (full), Windows IOT Core, Linux (ubinux, Ubuntu, Yocto)
<b>IP</b>	IP68

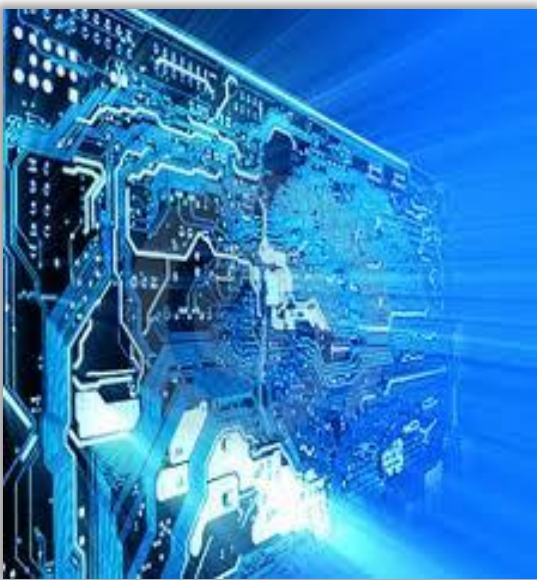




# IQRF-ready offering

- Outdoor Gateway kit for Production
  - Elements: AIOT-GWS03 + IQRF transceiver  
Antenna–Integrated solution
  - Release: sample available in July, MP by End of September
  - Where to buy: AAEON & IQRF





Thanks