Hugo Cunha

Senior Firmware Developer
Globaltronics

Globaltronic
spreading technology

NB-IoT Product Acceleration Platforms

CEBIT 2018

Speaker

Hugo Cunha| Project Developper

UNIÃO EUROPEIA
Fundos Europeus Estruturais e de Investimento

COMPETE 2020
PROGRAMA OPERACIONAL COMPETITIVIDADE E INTERNACIONALIZAÇÃO

PORTUGAL 2020

Agenda

CEBIT

- About us
- NB IoT Platforms
- The WIIPIIDO
- The Gateway FE

1 – About us

CEBIT

Globaltronic
spreading technology

Globaltronic is an electronics company based in Águeda, set up in 2002 and operating in the following areas of business:

ENERGY EFFICIENCY

> Energy monitoring

> Intelligent lighting systems (drivers; communication equipment, WEB platforms)

One Country, All Solutions
PROVIDING THE FUTURE

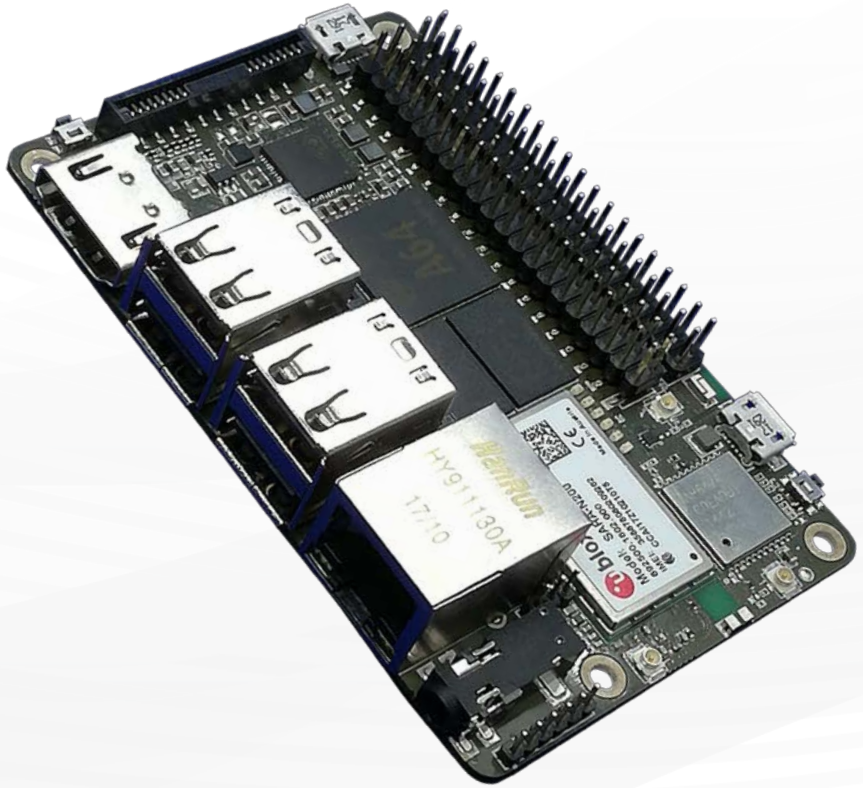
1 DESIGN, ENGINEERING
2 TOOL & MOLD DESIGN
3 PROTOTYPING
4 INDUSTRIALIZATION

2 – NB IoT Platforms

CEBIT

Fast track deployment platforms

WIIPIIDO®



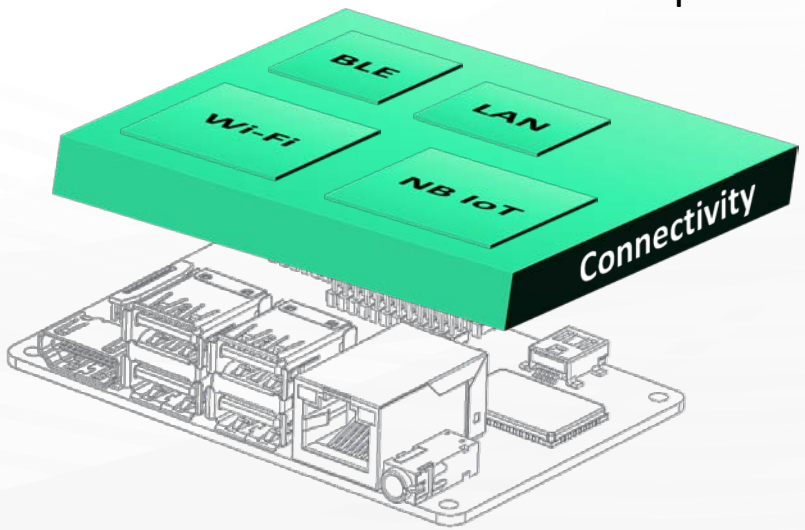
plus GNTEWNY FE

3 – The WIIPIIDO

CEBIT

BLE:

- 2.4GHz BLE 4.0 (Bluetooth Low Energy)
- RX Sensitivity: -103dBm
- TX Power: [-23dBM, + 3dBm]
- AES 128 encryption
- Master and slave operation modes



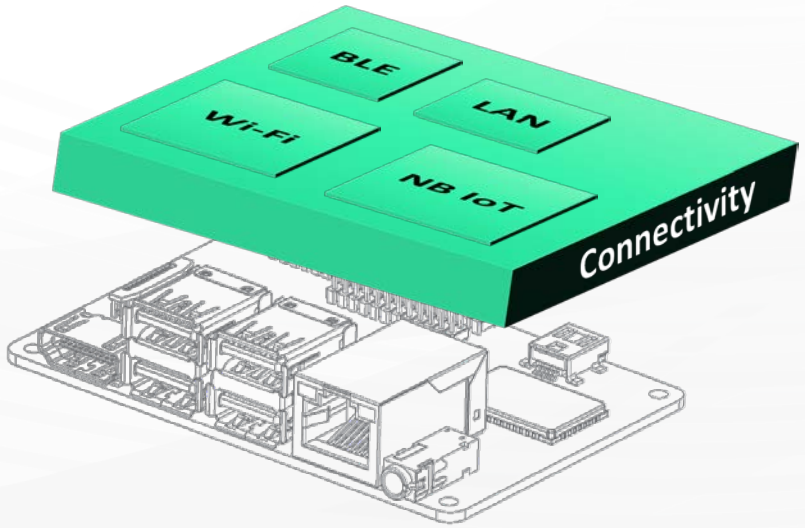
- Connectivity
- Performance
- Peripherals
- Graphics
- Others

3 – The WIIPIIDO

CEBIT

LAN:

- Gigabit 10/100/1000 LAN with GMAC ethernet built-in module conforms to the IEEE 802.3 standard
- Ensures wire-rate throughput without any artificial performance bottlenecks and uses the full capabilities of DMA to the main memory



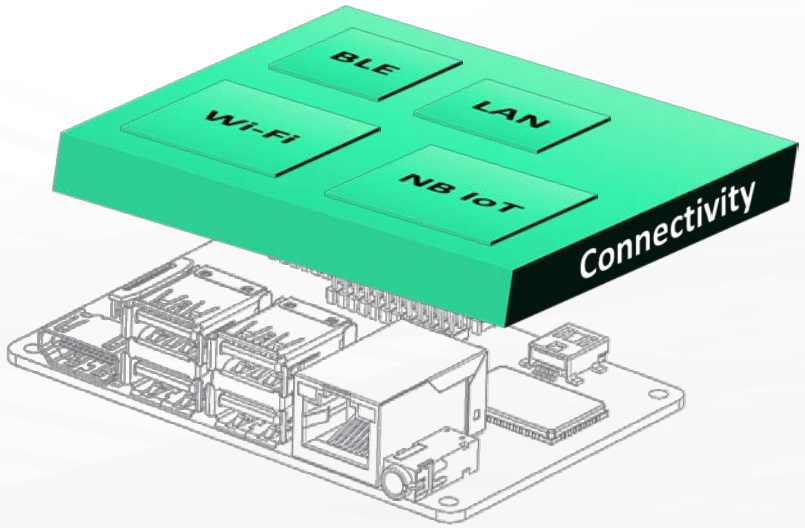
- Connectivity
- Performance
- Peripherals
- Graphics
- Others

3 – The WIIPIIDO

CEBIT

Wi-Fi:

- 2.4GHz 802.11 b/g/n module 300 Mbps
- Built-in external antenna connector



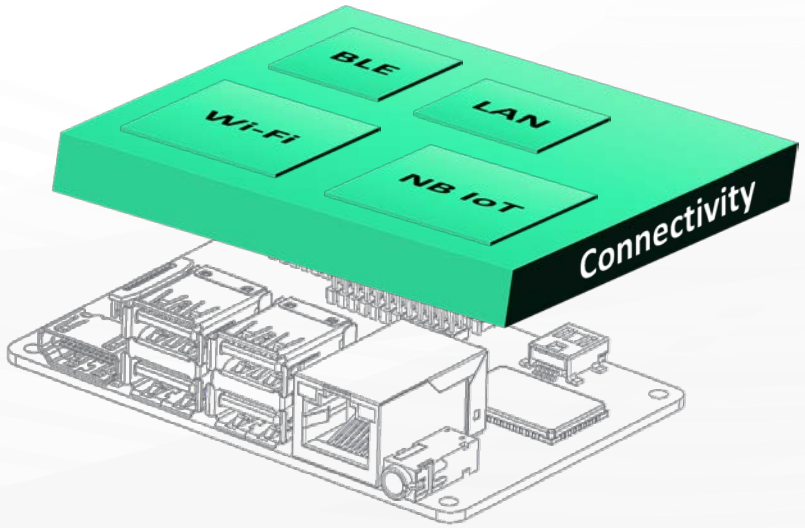
- Connectivity
- Performance
- Peripherals
- Graphics
- Others

3 – The WIIPIIDO

CEBIT

NB-IoT

- The built-in SARA-N2 NB-IoT module features extremely low power consumption in both idle and connected modes for NB-IoT operation
- On going integration with Huawei Lite OS allowing an plug and play integration with NB-IOT and Huawei IOT platform



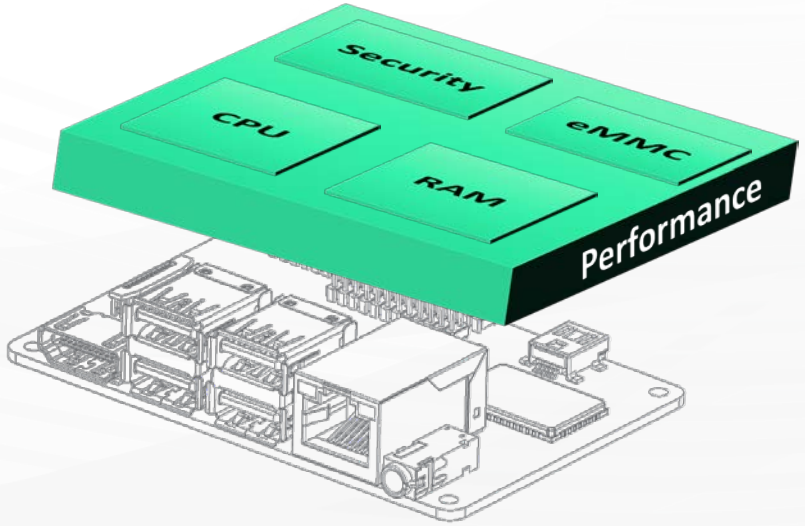
- Connectivity
- Performance
- Peripherals
- Graphics
- Others

3 – The WIIPIIDO

CEBIT

Security

- The WIIPIIDO provides hardware security features that enable trustzone security system, Digital Rights Management (DRM), information encryption/decryption, secure boot, secure JTAG and secure efuse



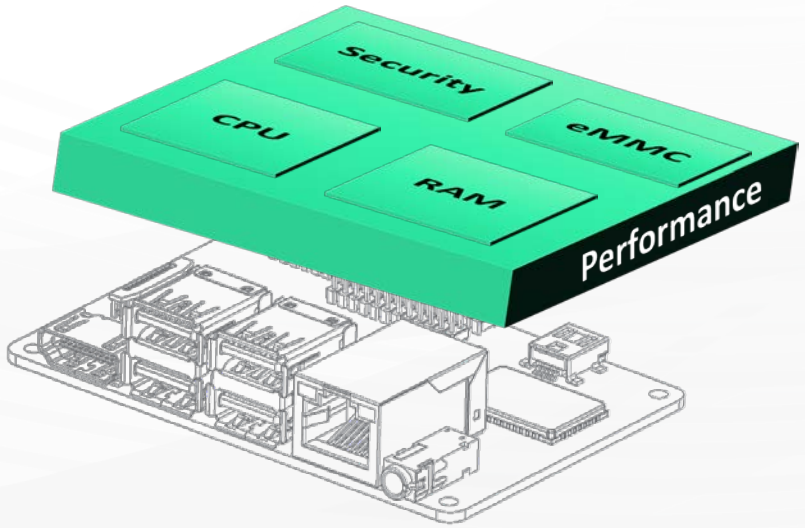
- Connectivity
- Performance
- Peripherals
- Graphics
- Others

3 – The WIIPIIDO

CEBIT

eMMC

- 8 GB INAND eMMC Flash Drive
- Sustained Read: 4.5MB/s
- Sustained Write: 100 MB/s



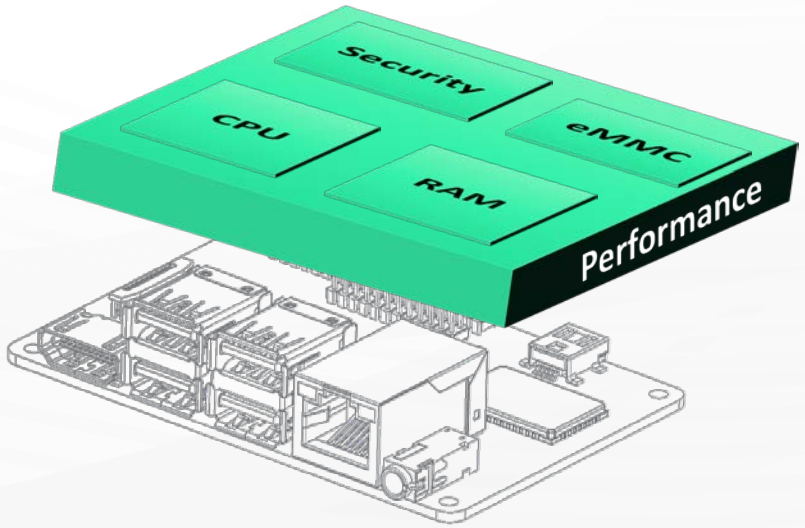
- Connectivity
- Performance
- Peripherals
- Graphics
- Others

3 – The WIIPIIDO

CEBIT

64 bit CPU

- Quad-core ARM Cortex-A53 Processor with 64 and 32 bit execution states for high scalable performance, which includes a NEON multimedia processing engine



- Connectivity
- Performance
- Peripherals
- Graphics
- Others

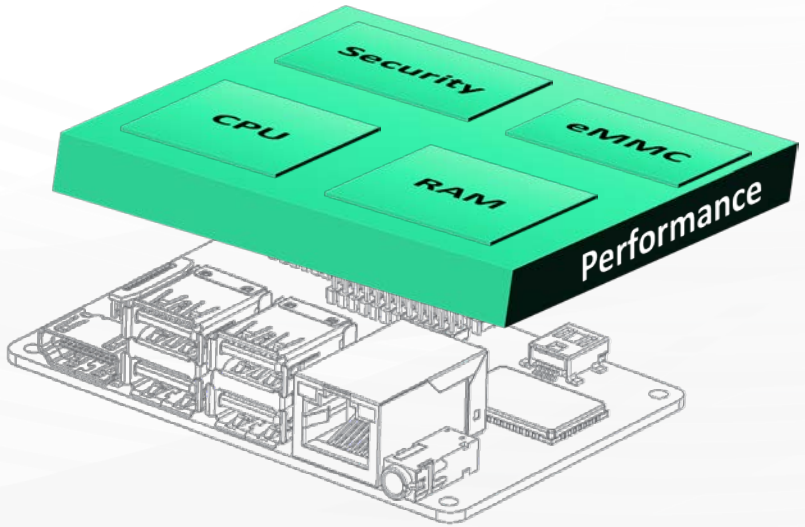
3 – The WIIPIIDO

CEBIT

RAM

RAM

- DDR3 RAM with 2GB up to 1300MHz



Connectivity

Performance

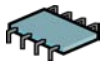
Peripherals

Graphics

Others

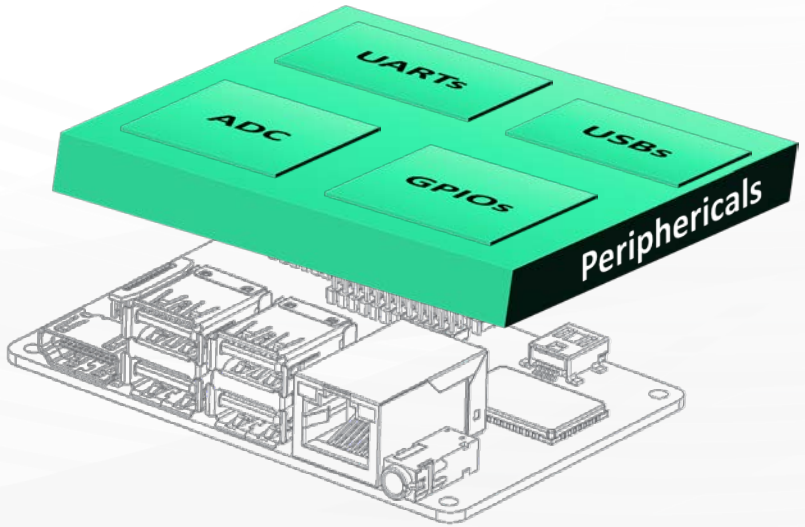
3 – The WIIPIIDO

CEBIT



UARTs

- 6 independent UARTs



Connectivity

Performance

Peripherals

Graphics

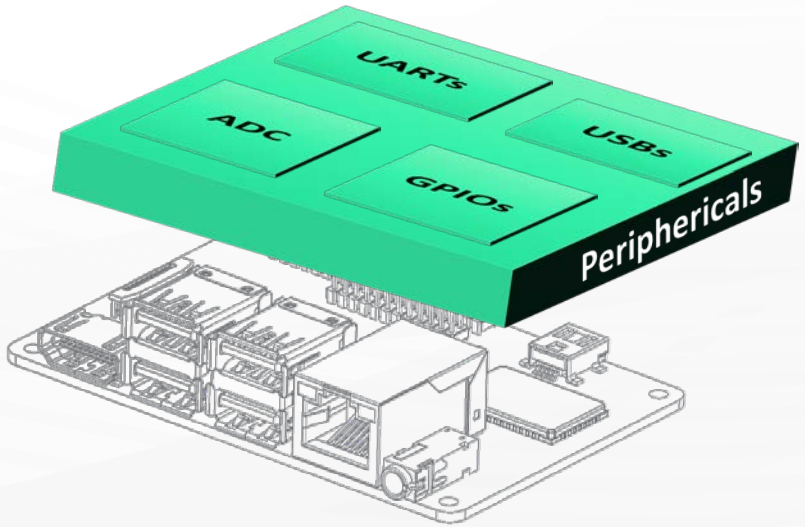
Others

3 – The WIIPIIDO

CEBIT

USBs

- USB OTG v2.0 operating at high speed (480Mbps) with PHY



Connectivity

Performance

Peripherals

Graphics

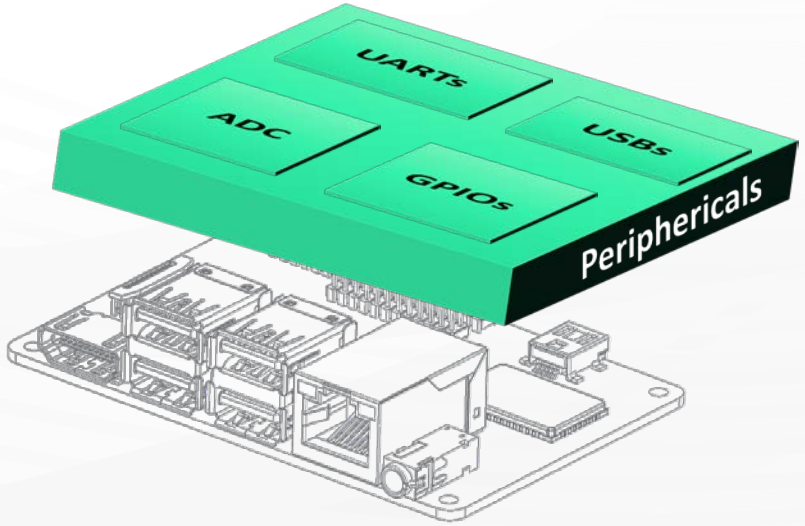
Others

3 – The WIIPIIDO

CEBIT

ADC

- 16 Bit ΔΣ Analog do digital converter with 4 channels
- featuring Low Current Consumption, One-Shot Conversion with 1 SPS of 9uA and Continuous Conversion at 135uA.
- Can also work in 12 bit mode, for power saving, reducing the one shot conversion to 0,56uA.



Connectivity

Performance

Peripherals

Graphics

Others

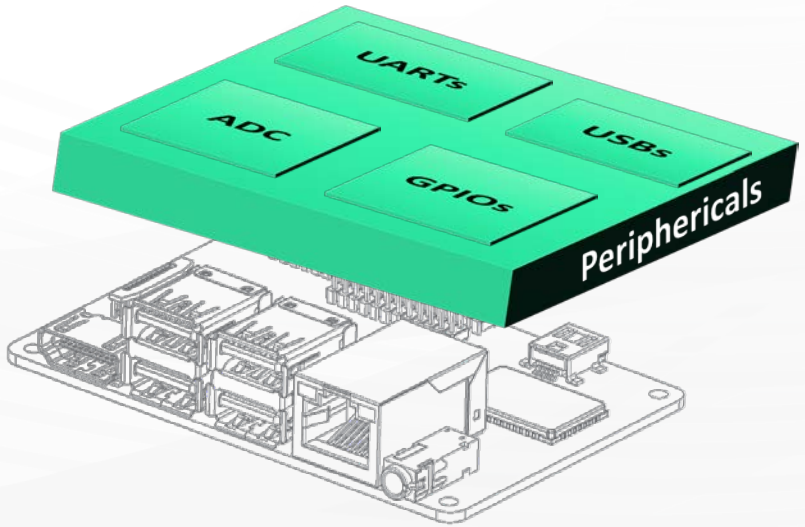
3 – The WIIPIIDO

CEBIT

GPIO

GPIOs

- 33 generic multipurpose IOs
- It also features 2 SPI, 1 I2C and 1 PWM pins



Connectivity

Performance

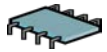
Peripherals

Graphics

Others

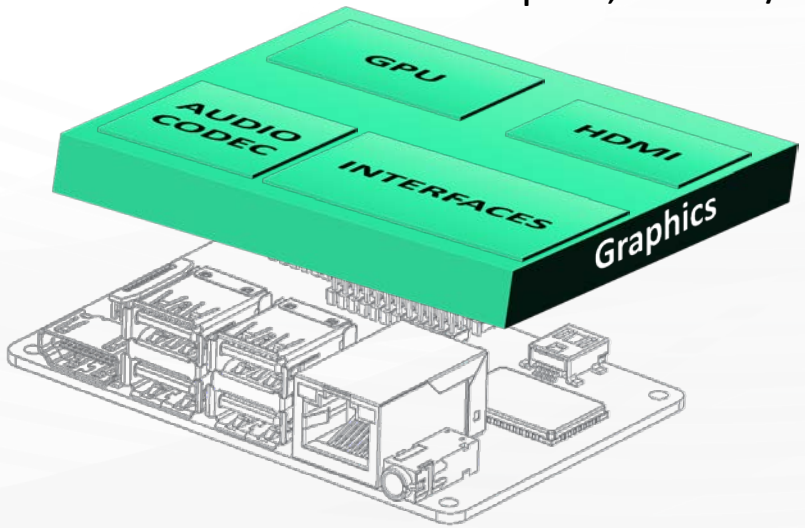
3 – The WIIPIIDO

CEBIT



GPU

- Mali400MP2 GPU supports OpenGL ES 2.0, Open VG1.1
- Supports H.265 4k@30fps video decoding
- Supports multi-format 1080p@60fps video decoding, including H.264 BP/MP/HP, VP8, MPEG1/2, MPEG4 SP/ASP GMC, H.263 including Sorenson Spark, WMV9/VC-1, JPEG/MJPEG



- Connectivity
- Performance
- Peripherals
- Graphics
- Others

3 – The WIIPIIDO

CEBIT

Connectivity

Performance

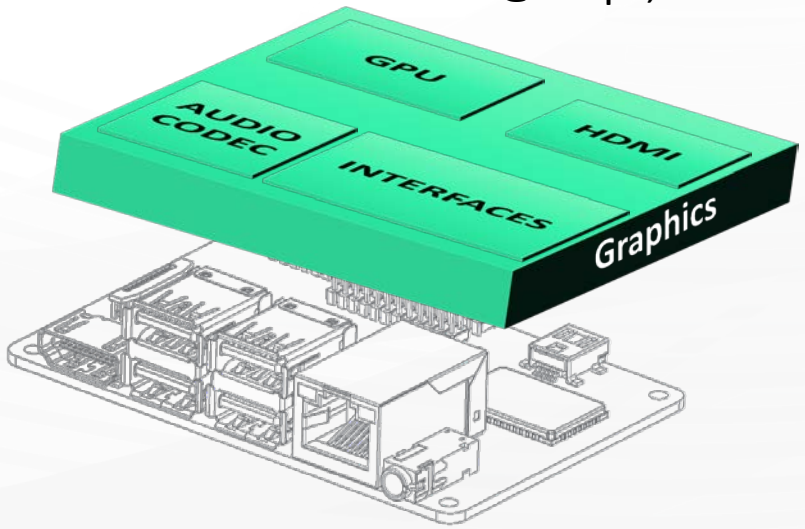
Peripherals

Graphics

Others

HDMI

- A64 features Allwinner´s SmartColor2.0 technology with an integrated display engine.
- Content can be displayed on 4-lane MIPI DSI displays up to 1366x768@60fps, or a RGB panel interface or LVDS panel up to 1366x768@60fps, TV-out HDMI v1.4 is also supported up to 4K@30fps

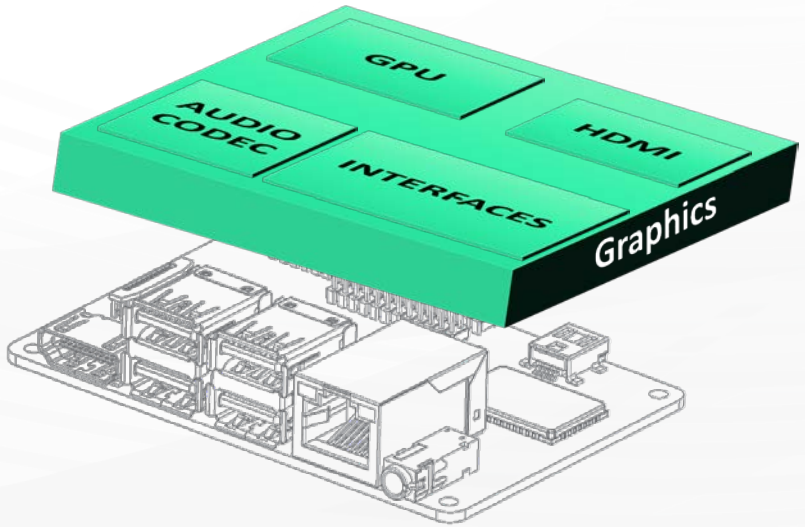


3 – The WIIPIIDO

CEBIT

AUDIO

- A integrated audio subsystem delivers extremely low power audio playback and exceptional high quality sound
- It also supports DAC Sample Rates from 8KHz to 192HKz
- Audio input, output with 3,5mm jack, supporting HDMI audio, I2S and PCM

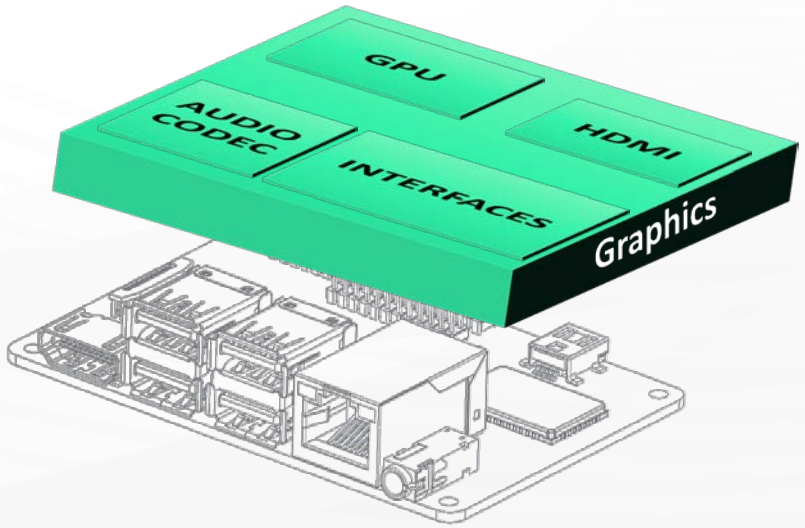


- Connectivity
- Performance
- Peripherals
- Graphics
- Others

3 – The WIIPIIDO

CEBIT

- INTERFACES
  - MIPI LCD Interface (LVDS 1366x768@60fps)
  - CSI camera 1080p@30fps



Connectivity

Performance

Peripherals

Graphics

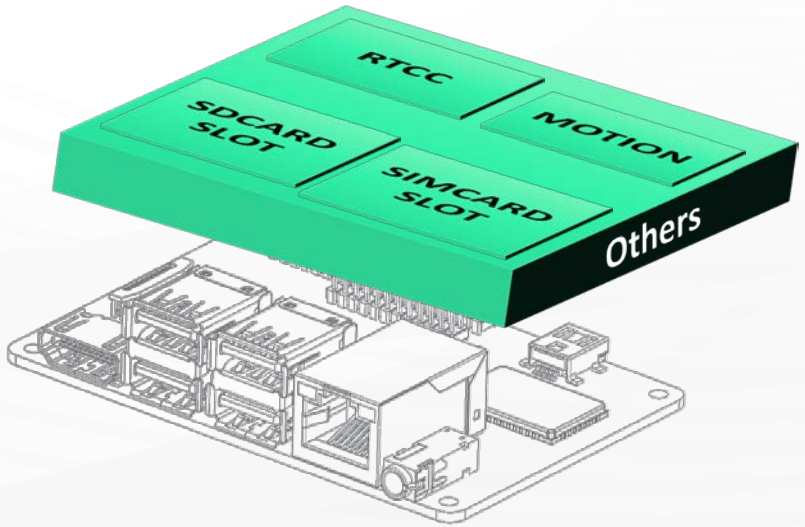
Others

3 – The WIIPIIDO

CEBIT

RTCC

- The WIIPIIDO uses a RTCC real time clock and calendar with energy backup



Connectivity

Performance

Peripherals

Graphics

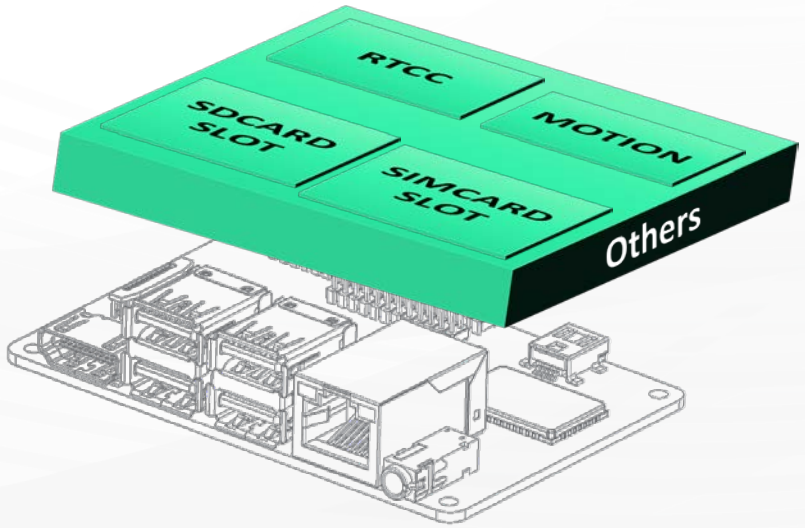
Others

3 – The WIIPIIDO

CEBIT

ACCELEROMETER

- Digital accelerometer X, Y, Z Axis +/- 2g, 4g, 8g



Connectivity

Performance

Peripherals

Graphics

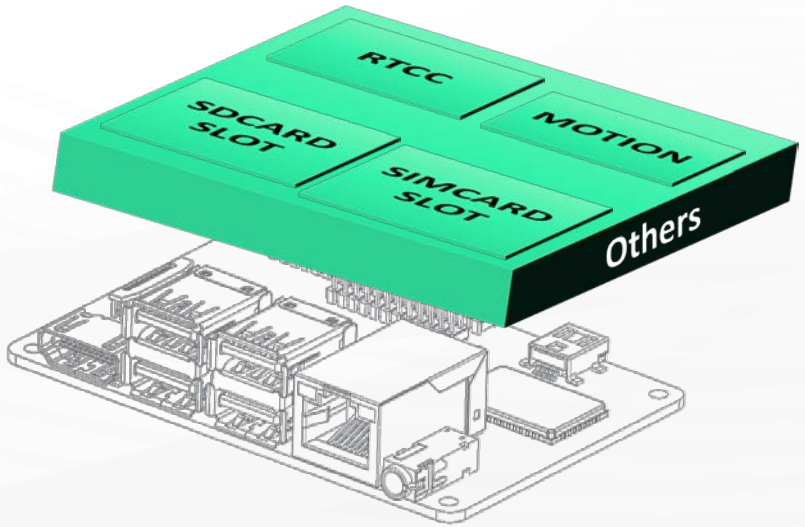
Others

3 – The WIIPIIDO

CEBIT

SDCARD

- MicroSD card slot
- Max size: 64GB



Connectivity

Performance

Peripherals

Graphics

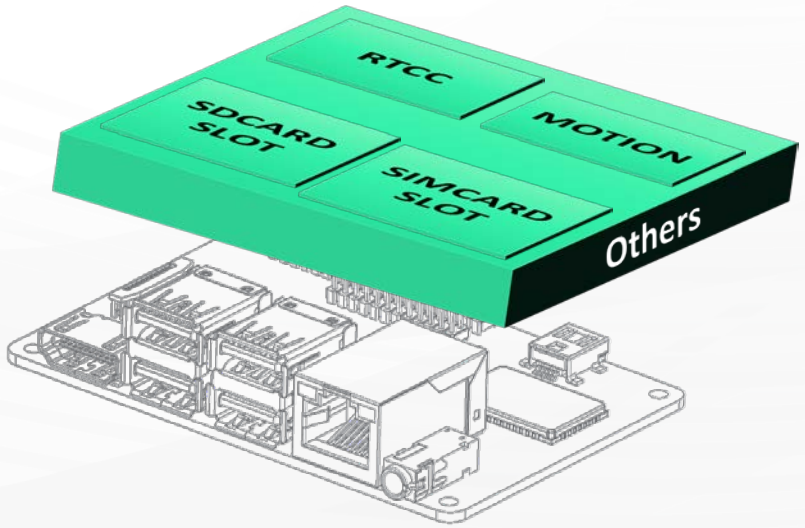
Others

3 – The WIIPIIDO

CEBIT

SIMCARD

- Micro SIM card push-pull connector



Connectivity

Performance

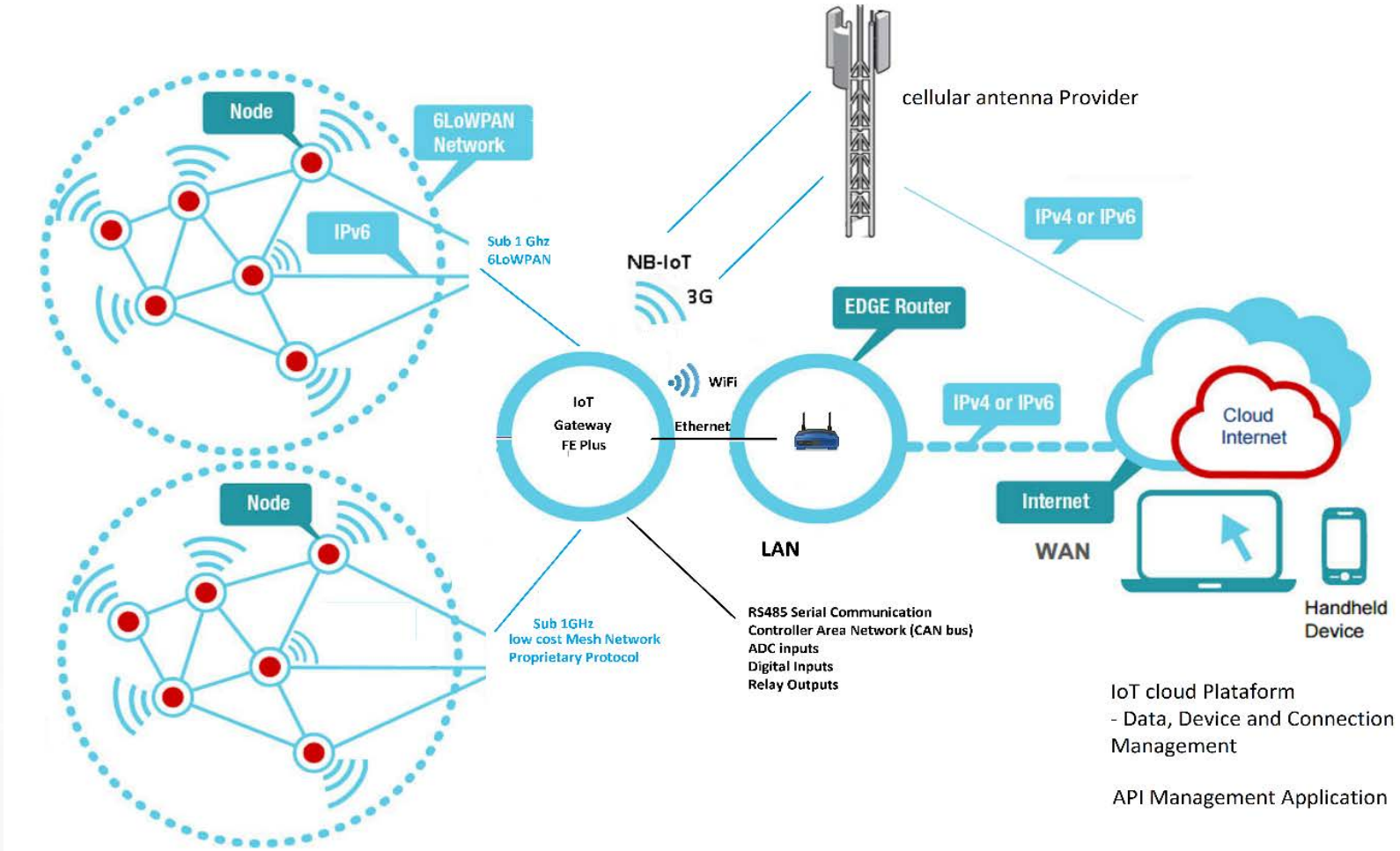
Peripherals

Graphics

Others

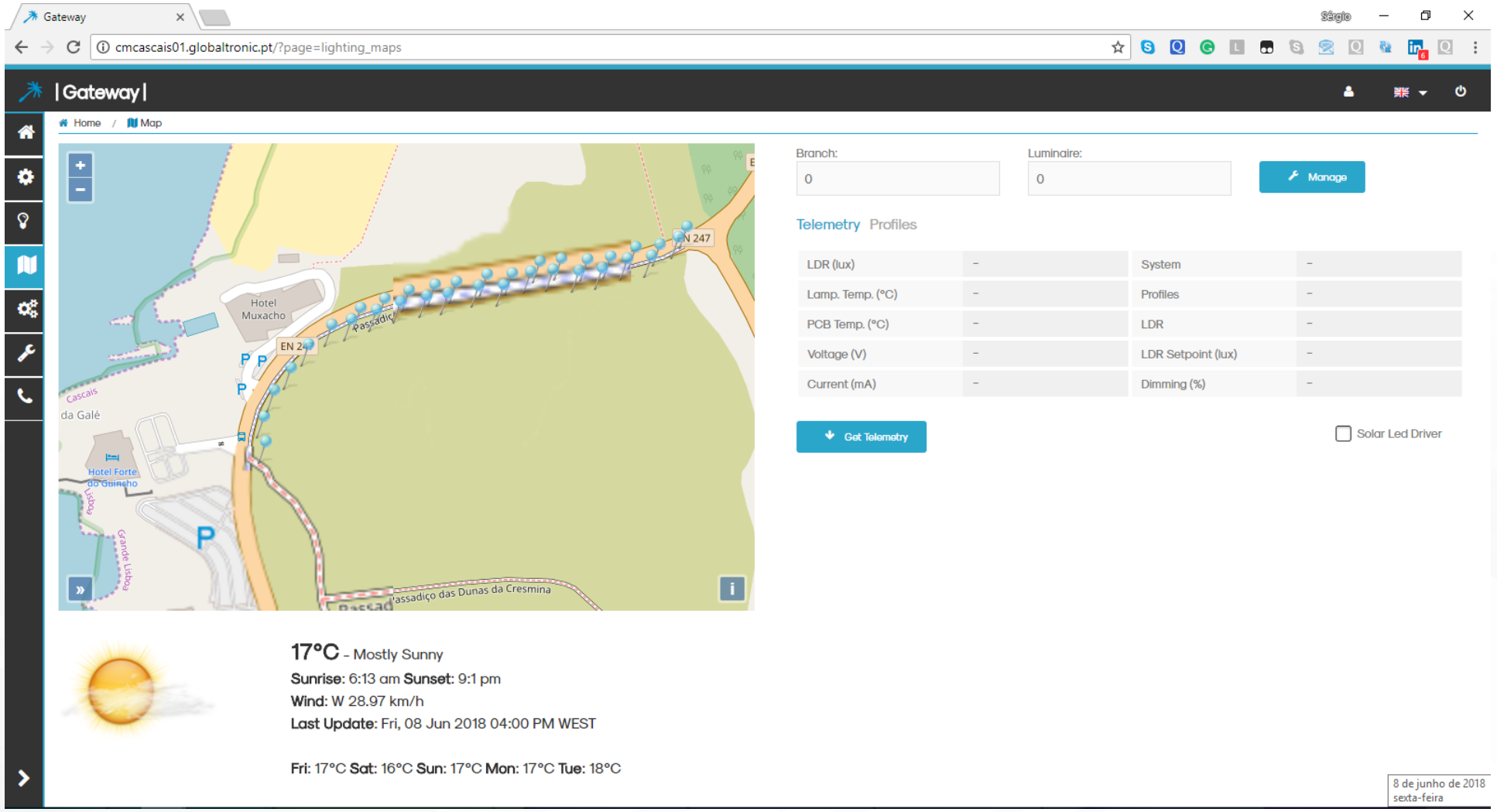
3 – The Gateway Fe Plus

CEBIT



3 – Live Demo

CEBIT



Thank You