CloudFlo

The Next Generation Liquor Dispensing System Featuring Java Embedded

Nicola La Gloria,
CEO

Wunder-Bar Higher Profits Pour Through Wunder-Bar

The Market

Food service and hospitality is a vibrant industry ($ 23 bn, 70.000 Point of Business in the US) that covers a wide range of areas including: **hotels, resorts, restaurants, bars, nightclubs, gaming** and **entertainment, travel** and **tourism, events, meetings** and more.

%	Type	POB	Revenues ($ bn)
20.4	Bars	11,569	3.11
31.2	Taverns	17,732	3.7
11.6	Cocktail and Lounges	6,599	1.61
8	Night clubs, disco, cabarets.	4,541	1.89
20.1	General Drinking Places	11,502	4.1
8.7	General Classification	4,000	1

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

What is a LDS?

Liquor Dispensing and Management Systems provide to the hospitality industry tools to increase their Return of Investment by:

- recording and controlling liquors poured
- eliminating over pouring
- making dispensing fast and easy for bartenders
- giving to managers the control and accountability of the processes

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

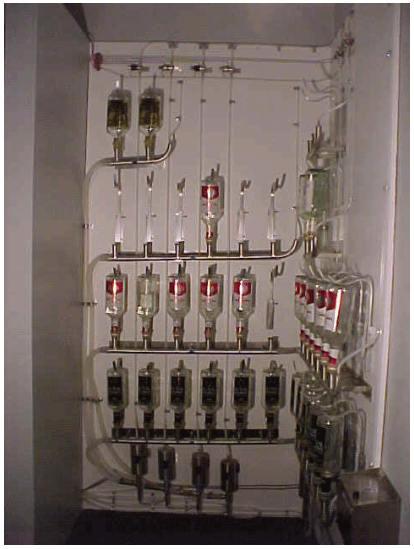
Why innovate on LDS technology?

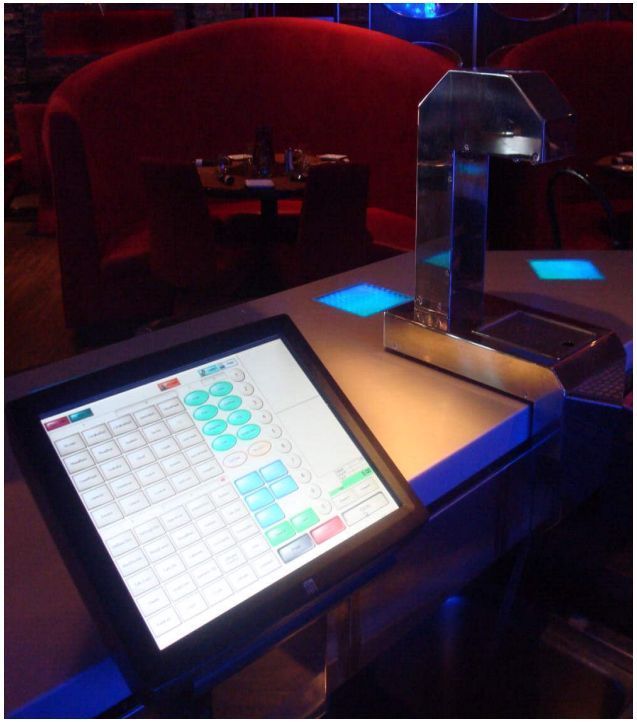
Most of the LDS present in the market are built on conservative and old fashioned artifacts:

- Wired guns
- Limited number of brands handled
- Limited business logic
- Dedicated and expensive hardware
- Archaic software technologies
- No standards to be easily integrated with other third-party technologies

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Some examples





(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Kynetics Wunder-Bar Higher Profits Pour Through Wunder-Bar Si14

What is CloudFlo

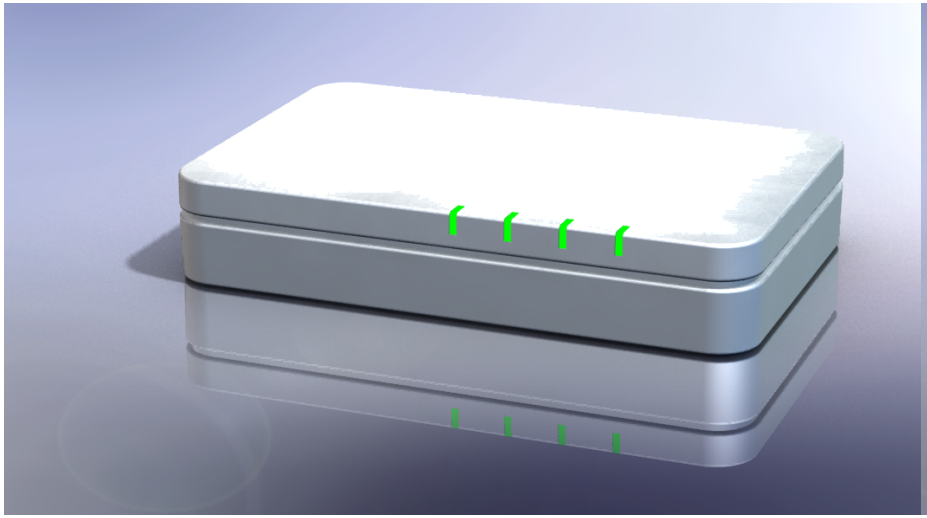
CloudFlo is an innovative RF-wireless based liquor dispensing and management system for the next generation of "smart-bars" featuring:

- Freescale i.MX 28 ARM SOC
- Wireless spouts and beer-flow meters
- Java™ SE 7 Embedded (headless) for ARM version 4-5
- Internal DB
- Serial POS communication featuring 9 different legacy protocols for front of the house operations
- Web Based Management Interface based on a lightweight Java Application Server
- Standard REST or stateful application interfaces to enable advanced back of the house operation or Cloud integration (2.0)
- Java reporting software

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Kynetics Wunder-Bar Higher Profits Pour Through Wunder-Bar Si14

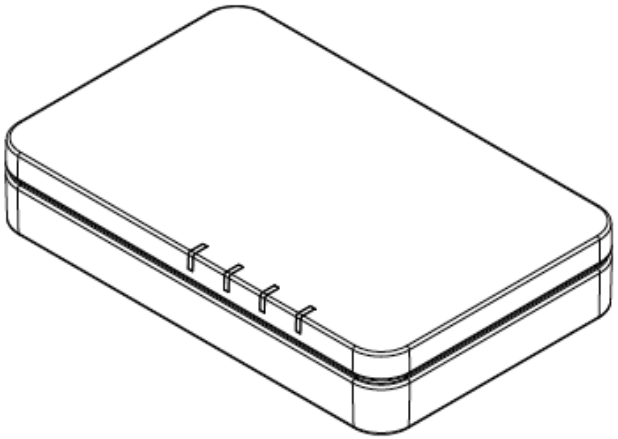
CloudFlo Product Layout

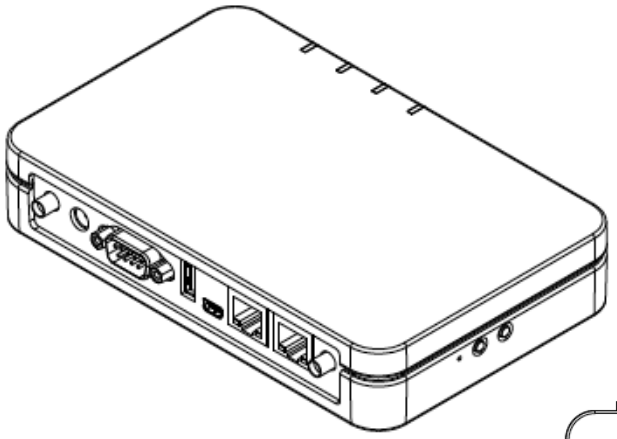


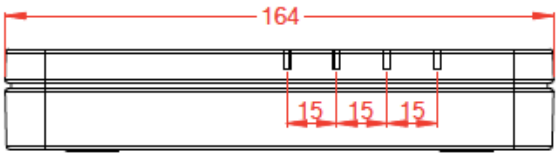
(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

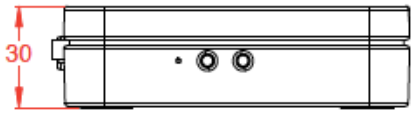
Kynetics Wunder-Bar Higher Profits Pour Through Wunder-Bar Si14

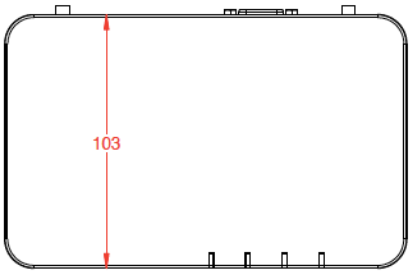
CloudFlo Product Layout











(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Kynetics Wunder-Bar Higher Profits Pour Through Wunder-Bar Si14

How CloudFlo helps the business.

Make money:

- Provide real time sales
- Ensure product consistency with quick and precise dispensing.
- Every drink poured is accounted controlling costs
- Liquor and beer inventory are secured
- Cut liquor purchases
- Expand POB data gathering, conveniently, wireless

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Kynetics Wunder-Bar Higher Profits Pour Through Wunder-Bar Si14

How CloudFlo helps the business.

Save money:

- ¼ ounce over-pour on a ounce shot increase cost by 25%
- Compare what has been sold with what has been poured
- Integrated with already existing serial POS systems
- Eliminates giveaways and theft.
- Easy maintenance.

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Kynetics Wunder-Bar Higher Profits Pour Through Wunder-Bar Si14

Why Java?

- Java SE 7 for ARM is production ready.
- Java is “de facto” a standard on B2B platforms. With Java SE 7 for ARM, Embedded and Enterprise platforms can be easily integrated
- Fast prototyping and deployment
- Re-use Java code/libraries already in production.
- Easy and robust DB Integration
- Huge number of libraries, framework and products
- Java servlets (sandbox) for business logic on embedded web interfaces
- Great web interfaces with GWT.

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Definitions

* **Field Devices:** wireless spouts and wireless beer-flow monitors
* **CFU:** radio base station which gather data from FD.
* **PC:** acts as an aggregator of multiple business data coming from CFU and POS to generate reports
* **BI:** Business Intelligence, activities aimed at exploiting available data to improve bar efficiency
* **Bar:** a logical collection of FD.
* **ROI:** Return on Investment, assessed by comparing incomes from Liquor sold vs expenses for Liquor Poured

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Definitions (2)

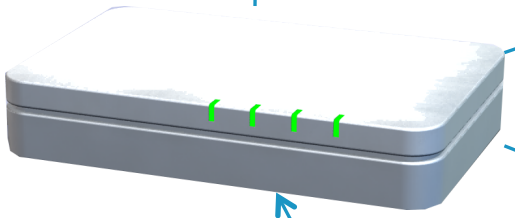
* **Point of Sale** (POS) remains the backbone of the restaurant industry, and typically consists of both front of house (i.e. POS terminals) and back of house (i.e. restaurant management) solutions.
* **ECR** (Electronic Cash Register): literature considers these devices less evolved with respect to POS. They typically feature front-of-the-house capabilities only. ECR reports are printed on narrow receipt paper, programming is usually done via ECR keypad and they feature **RS-232** communication for liquor dispensing (LDS) system connections.
* **NLU** Number Look Up, identification code of a product for sale in the POB predefined in the POS and LDS.

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

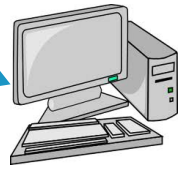
How it works

Export
(CSV)

NLU



Export
data



REST
Services
(2.0)

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Kynetics Wunder-Bar Higher Profits Pour Through Wunder-Bar Si14

CloudFlo Goals:

* The main goals of CloudFlo are:
  * track the quantity of poured liquors
  * track the quantity of poured beers
  * manage brands and prices
  * manage price lists (happy hours)
  * Make POS-LDS communication aligned with third-party POS.
  * export (CSV) finalized on external storage
  * export finalized data to a specific software for report generation
  * Provide web services to third-party platforms

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Front Of the House

* Many POS/ECR support RS-232 serial communication protocol to manage FOH operations.
* Each time a liquor is dispensed the LDS sends a product identification Number (NLU) to the POS by a synchronous serial communication.
* Most of the protocols (POS-01,02,03,04,06,07,09) differ in NLU's numerical range and serial speed.

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Back Of the House

* BOH capabilities are, usually, those operations related to the management of the POB like:
  * **Inventory**
  * **Reports**
  * **Accounting**

* Many POS feature some BOH capabilities.
* **PCs and specific software are usually used as BOH**

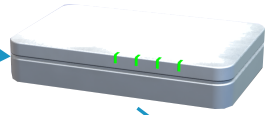
(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Kynetics Wunder-Bar Higher Profits Pour Through Wunder-Bar Si14

Simple Scenario

FoH POS

RS-232



Local PC

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Kynetics Wunder-Bar Higher Profits Pour Through Wunder-Bar Si14

Complex Scenario

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Kynetics Wunder-Bar Higher Profits Pour Through Wunder-Bar Si14

User Interfaces

* **Barman:** interacts directly with spouts and POS. He can receive support information about system status through the CFU's LEDs
* **Service Operator:** interacts with the CFU, spouts and the POS to configure the system.
* **Bar Manager:** interacts with PC, BoH, Cloud
* **Enterprise Manager:** interacts with the cloud

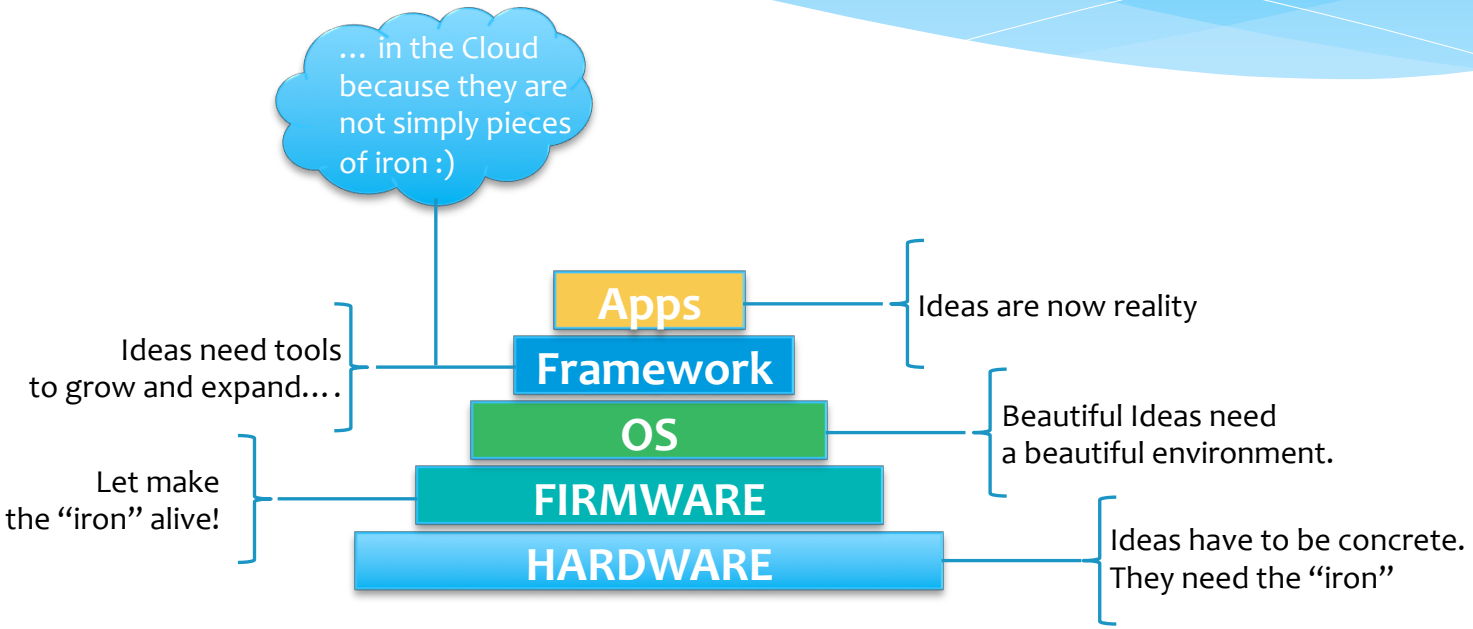
(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Actors

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Kynetics Wunder-Bar Higher Profits Pour Through Wunder-Bar Si14

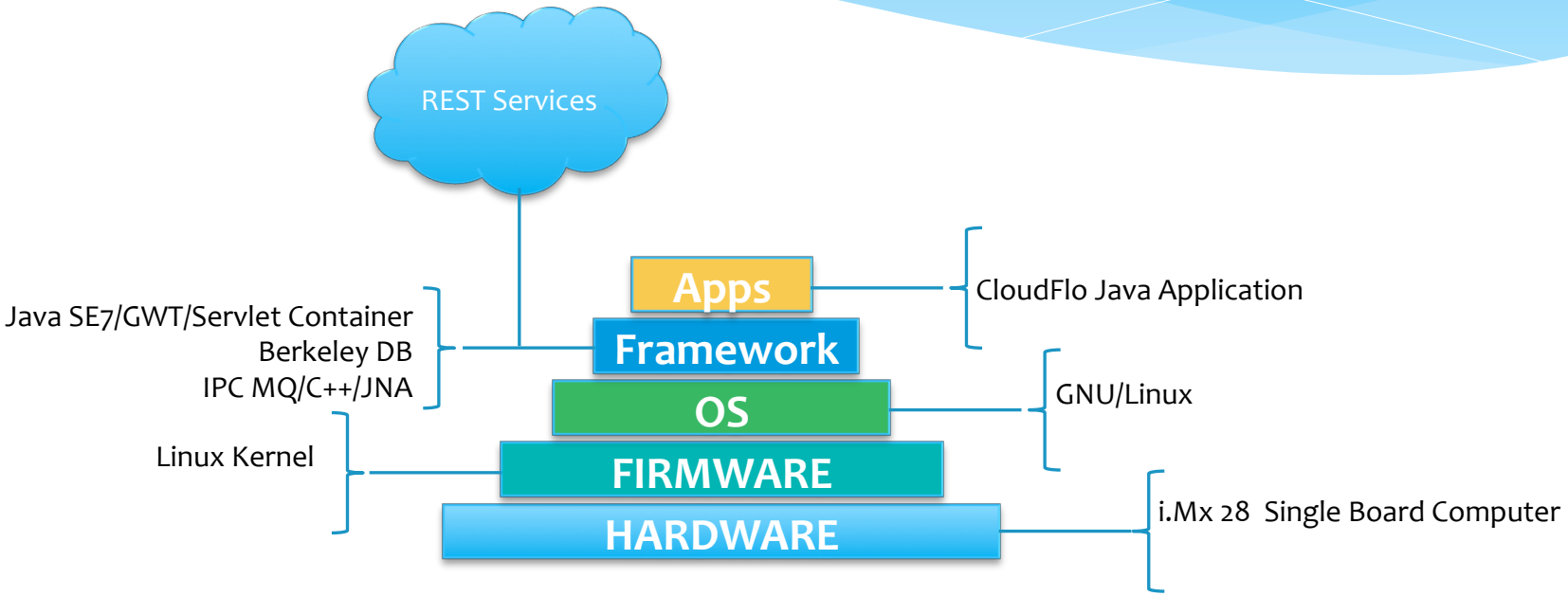
Product Stack Outline



(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

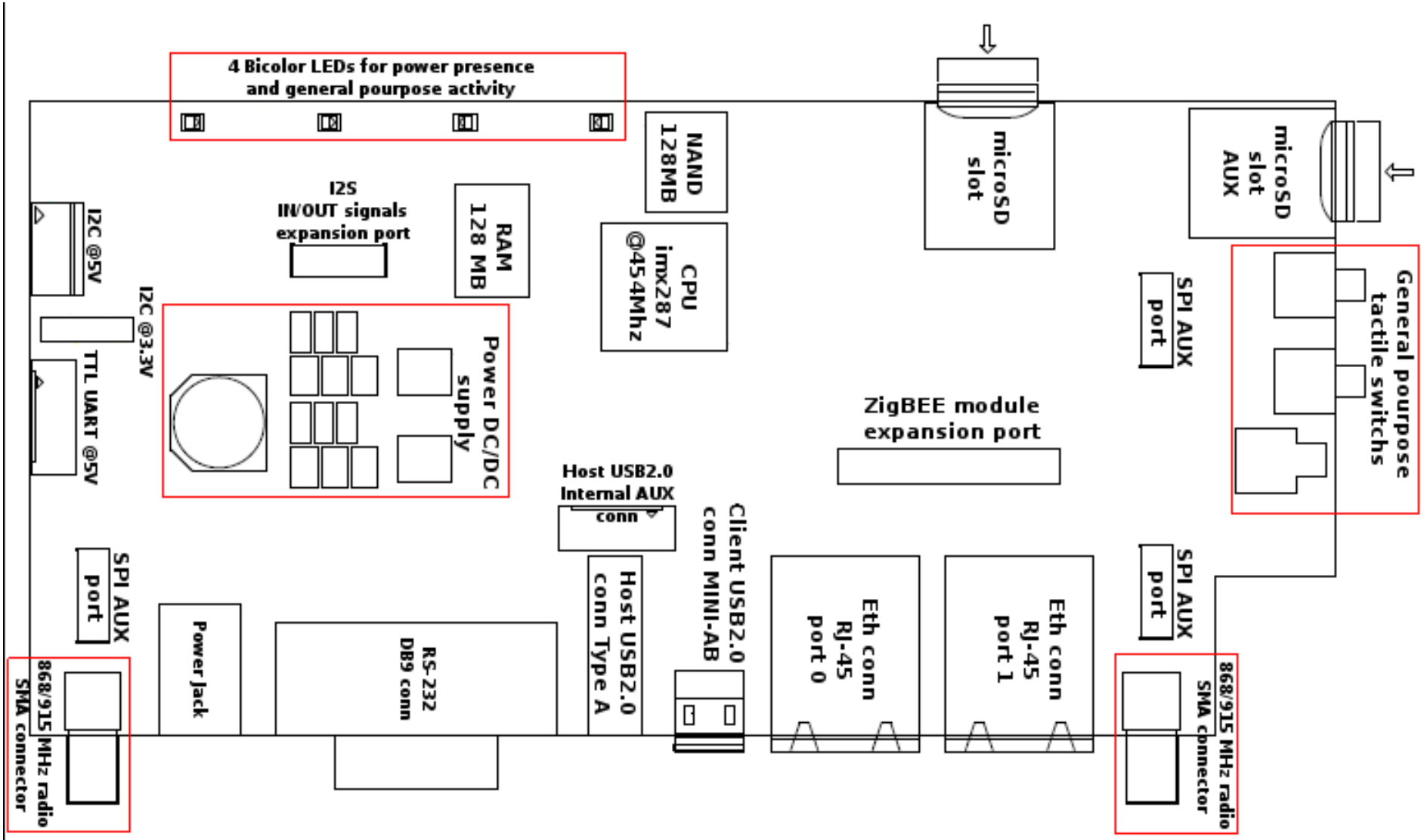
Kynetics Wunder-Bar Higher Profits Pour Through Wunder-Bar Si14

CloudFlo Product Stack



(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Kynetics Wunder-Bar Higher Profits Pour Through Wunder-Bar Si14

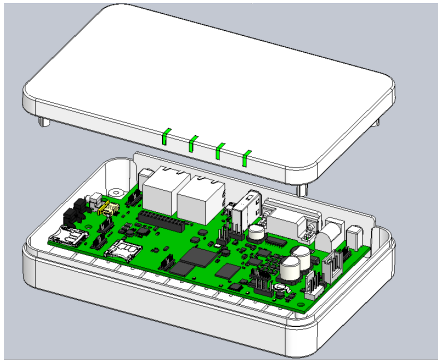


i.mx28 CloudFlo Board Layout

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Kynetics Wunder-Bar Higher Profits Pour Through Wunder-Bar Si14

CloudFlo Hardware Features

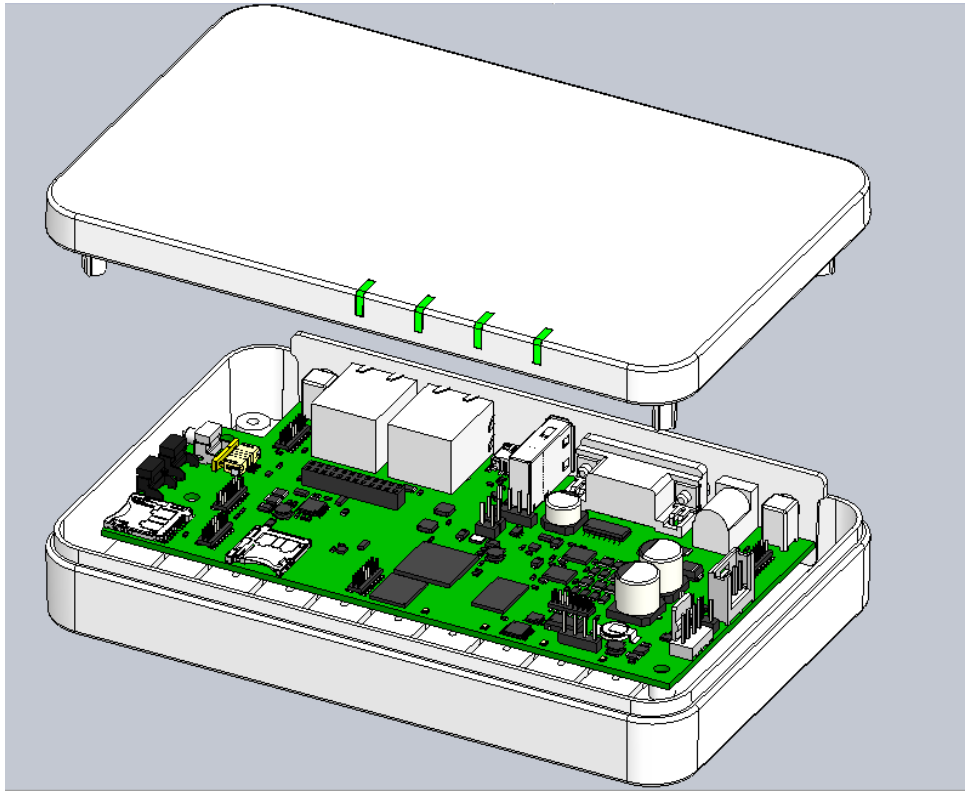


- 128MB RAM DDR2
- 128MB NAND FLASH MEMORY
- internal micro SD/SDHC card slot
- USB2.0 client up to 480Mbps
- USB2.0 host up to 480Mbps
- 2 Fast Ethernet PHY 10/100-Mbps
- 2 Sub-1GHz transceivers for 868/915 MHz Low-power wireless applications
- RS-232 port @DB9 connector
- Dual serial audio interface (SAIF) expansion port
- 3 SPI expansion ports
- 3 general pourpose tactile switch
- RTC
- I2C interface @3.3V & @5V
- UART up to 3.25 Mbps @5V
- ZigBEE 2.4GHz module expansion port
- 4 bicolor LEDs for power presence, CPU activity, general pourpose
- Power supply: 9-18V
- Buzzer
- 3.6V li-ion battery

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Kynetics Wunder-Bar Higher Profits Pour Through Wunder-Bar Si14

CloudFlo Hardware Features



OPTIONAL MODULES:

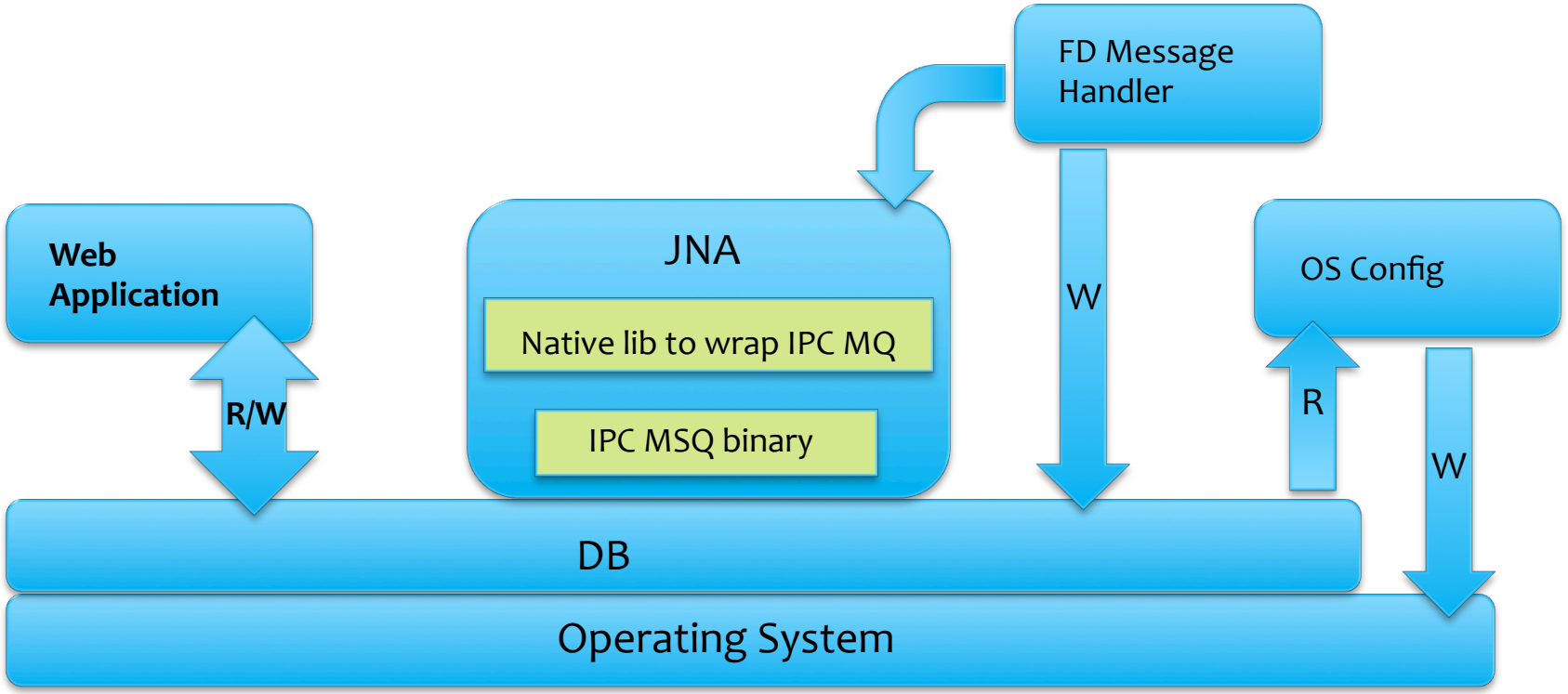
- Wi-Fi
- Bluetooth
- Audio codec & amplifier

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Kynetics Wunder-Bar Higher Profits Pour Through Wunder-Bar Si14

KDHD

CloudFlo Software Layer



(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

kynetics Wunder-Bar Higher Profits Pour Through Wunder-Bar Si14

Why Java is a turn-key technology for CloudFlo

- Developers are focused on the application layer
- High level of abstraction improving design and code quality
- Security
- Fast prototyping
- Modularity: new features can be easily integrated
- Consolidated development tools
- Multi-platform development

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Kynetics Wunder-Bar Higher Profits Pour Through Wunder-Bar Si14

Why Java improves the CloudFlo business

- **Scalability:** explore the value of the gathered data with many JEE based products cloud-ready.
- **Integration:** Third-parties can easy integrate their products using a multiplatform technology
- **Unification:** Embedded/Desktop/Enterprise with the same core technology
- **Standardization:** one platform for different domains

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Kynetics Wunder-Bar Higher Profits Pour Through Wunder-Bar Si14

Q/A

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Kynetics

Wunder-Bar

Higher Profits Pour Through Wunder-Bar

Si14

CloudFlo

Thank you!

(c) 2012 Kynetics Srl, Si14 Spa. All rights reserved.

Higher Profits Pour Through Wunder-Bar