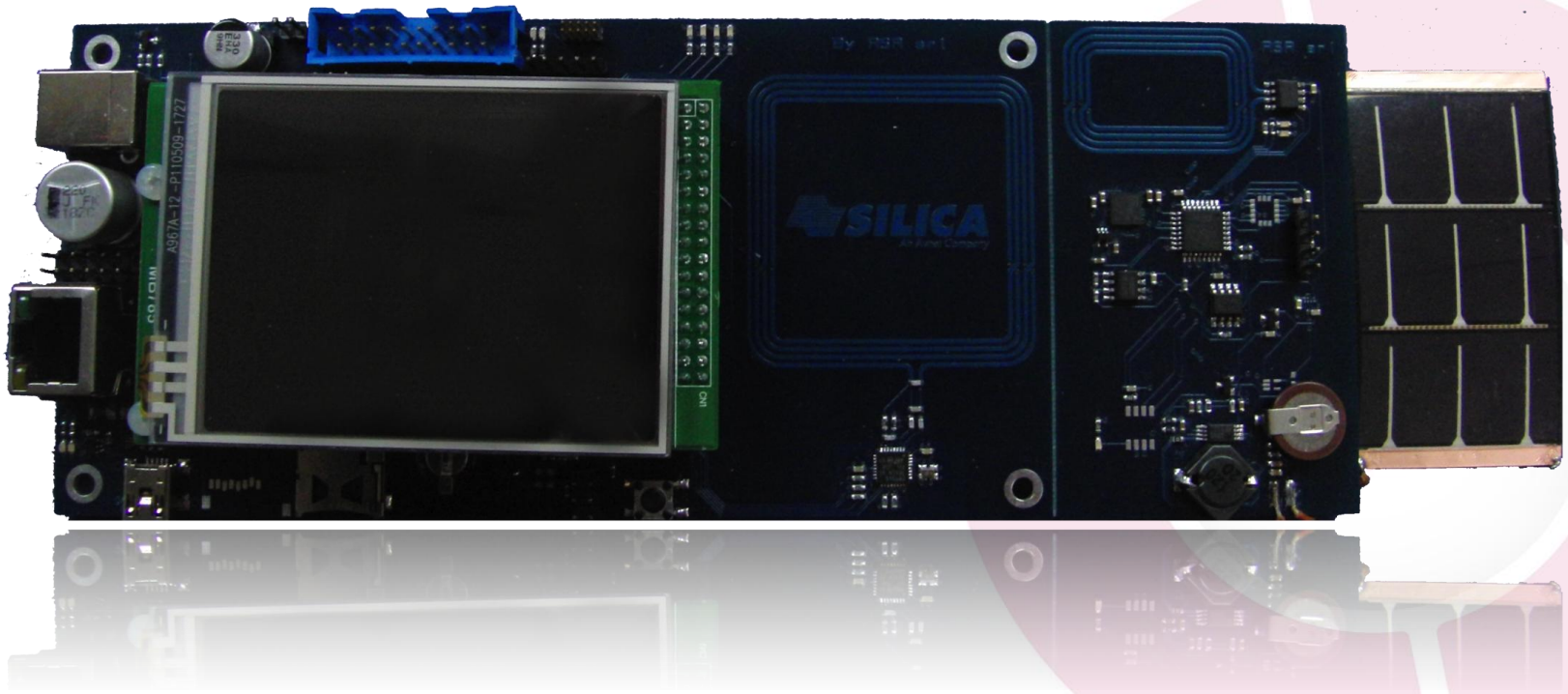
SILICA porfID



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General Description

- Developed by Silica and ST, Silica porfID is the complete solution for developing RFID and NFC in embedded market.
- porfID is a kit including two boards
  - First board is working as datalogger
    - Several sensors are mounted on it
    - Can be powered by battery
    - Data will be recorded in the ST Dual Interface Eeprom, a memory that can be read also from an RFID reader, including NFC mobile phones
  - Second board is working as RFID reader
    - Powered by the CR95HF, new ST NFC/RFID transceiver
    - Shows how it is easy to develop a reader able to read/write the Dual Interface EEPROM
    - Enable developer to create devices configurable wireless, even when the target device is off

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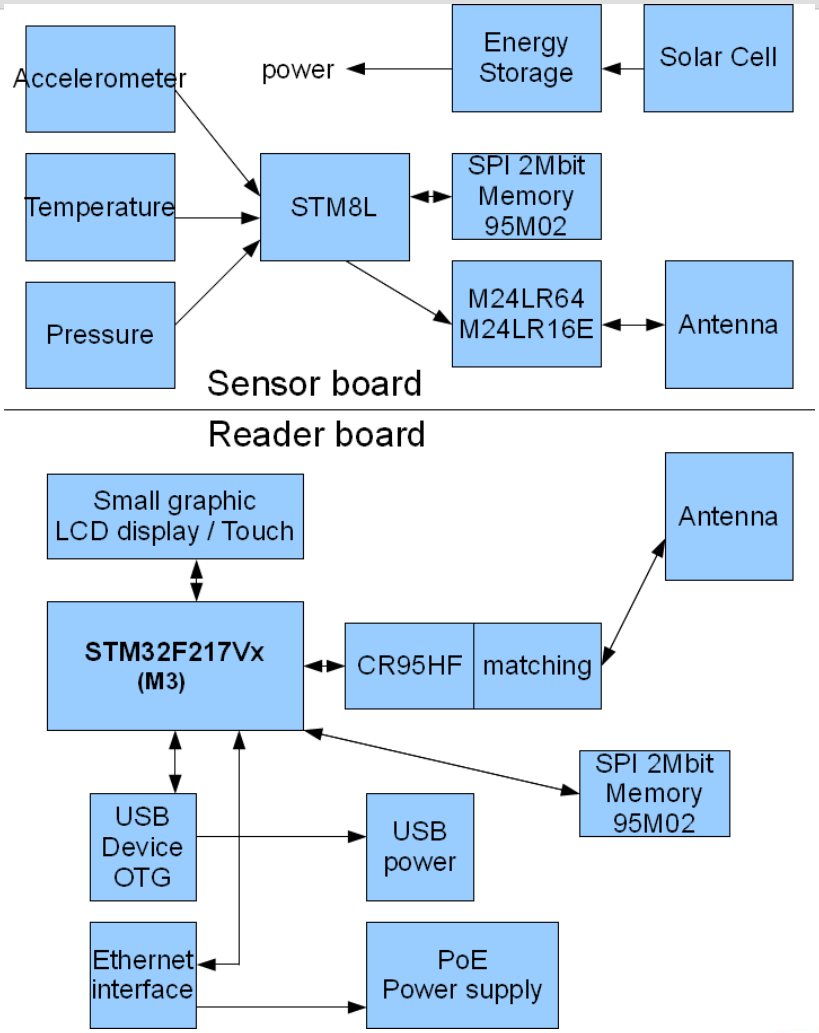
Block Diagram

- Silica porfID has two boards:
  - Datalogger (sensor board)
  - RFID Reader board
- Datalogger is a showcase of „energy harvesting sensors“
  - Harvesting from RF field and solar panel
  - Storing excess energy in a battery
- RFID Reader
  - based on latest Cortex ARM M3 from ST
  - Graphic display with basic gui
    - graph plotted of the sensors data
  - Emulator (STM32 Discovery) is embedded on the board
- Sources provided for free as an Atollic project, free envinronment



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Datalogger board

- Very low power sensors
  - Temperature, pressure, accelerometers MEMS.
- Sensors data stored in a dual interface non volatile memory
- Solar panel for harvesting energy (working with fluorescent lights too)
- Excessive power is stored in battery. Able to operate with no light
- Low-power microcontroller collects the data periodically
- Data on dual interface memory can be retrieved even when there is zero power
- Two leds are used for demoing the configuration change of the board via RFID

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RFID Reader board

- RFID Reader, NFC compatible, based on CR95HF
- Powerd by ST Cortex ARM M3
- Ethernet, with Power Over Ethernet
- USB configurable as Host, Device or OTG. Used to power the board
- Graphic touch screen
  - Basic GUI
  - Demo charts of the sensor data
  - Remote configuration demo
    - A simple application will write some parameters into the dual interface memory.
      - Sampling rate for sensors
      - Demo leds on/off/blinking

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