AND Technology Research

RE Partner Solution

Battery-less Product Development with Renesas RE01 MCU

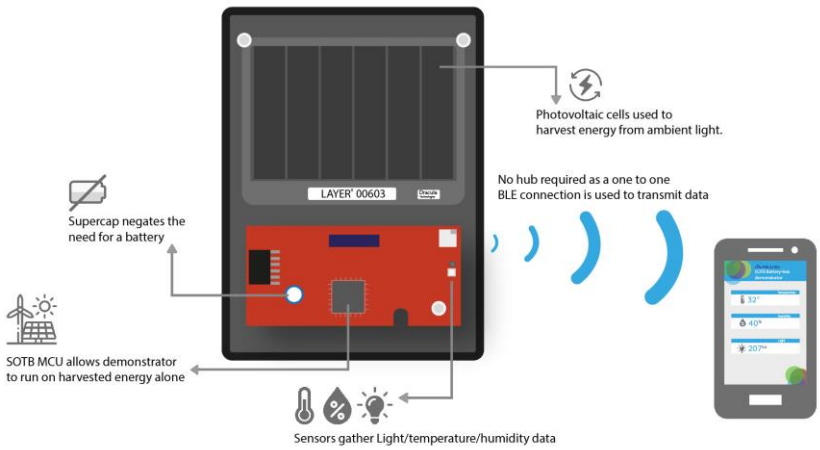
Solution Summary

The Battery-less SOTB demonstrator, built using the c2 platform by AND Technology Research, uses the Renesas RE Family's MCU powered from a Supercap that is charged using a PV panel, negating the need for a battery. The charged Supercap enables the demonstrator to measure Temperature, Humidity, and Light; and sending those readings via BLE to a phone where sensor readings are displayed on a custom application.

Features/Benefits

- The board runs on harvested energy alone with a Renesas RE Microcontroller featuring integrated energy harvesting control circuitry.
- A supercap is used as the main power storage, enabling the system to be completely charged and discharged repeatedly for years without a battery.
- Bluetooth Low Energy (BLE) Module is used to send data collected from the sensors to a phone.
- Features a photovoltaic cell used to harvest energy from ambient light.
- Built-in temperature, light, and humidity sensors connected to the SOTB MCU via I2C.
- PMOD Type 2 connector enables the ability to attach additional peripherals
- The AND Technology Research c2 development platform reduces development time by up to 50% and allows for the creation, connection, and deployment of bespoke products quickly.
- Equipped with fully tested software libraries and hardware reference designs, accelerating product development at any stage, reducing time-to-market and minimising development costs.

Diagrams/Graphics



Target Markets and Applications

- Energy Harvesting
- Manufacturing
- Agriculture
- Remote sensing
- IoT
- Industry 4.0

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About AND Technology Research

AND Technology Research is a purpose-led technology and product development consultancy who have been turning pioneering ideas into reality since 1980. During those 40 years, their experienced engineers have prided themselves on working with companies of all sizes to deliver true technology innovation.

Combining years of expertise, and two revolutionary technology development platforms together enables rapid delivery of robust and reliable technology services and products.

C2 IoT product development platform

c2 is an end-to-end product development platform that takes you from initial idea to commercialisation. It comes equipped with scalable, and easily configurable software libraries and fully tested, production hardware reference designs for any IoT product. This minimises the design iteration process and allows for resources to be spent on what matters - the unique features of a product.

Utilising our pre-configured and fully tested building blocks businesses can create, connect, and deploy market-ready products without reinventing the wheel.

Remove the headaches of embedded engineering using c2. Using a modular design and software libraries with simple API ensures flexible integration to avoid redevelopment and throwing away old code. Tested to industry standard, the c2 provides engineers with a quality foundation to build any IoT product.

Tento dashboard

AND Technology Research also comprises of expertise for every stage of product testing. Combining this with the Tento dashboard, businesses can track their entire testing journey ensuring quick turn-around of fully tested products.

Tento provides end-to-end visibility across the entire testing journey. Easily track test coverage and development progress from code to software unit, function, and through to product requirements.

Capture requirements traceability matrix, test protocols, and test evidence all in one place and see how far along the product development journey you are.

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