

## ePower™ ES1

Renewable energy source for low power devices. No batteries required. Indefinite lifespan using just kinetic and solar (Patent pending)

The ePower™ ES1 module generates it's own clean energy from the environment to energize low-power devices such as sensors and low power communications such as BLE. Includes a Light harvesting system, a Kinetic harvesting system and power management.

Relies on light and movement to charge super capacitors to power your sensor, managed by a specially calibrated power management chip.



### Features

- Generates power to run a range of IoT devices such as microcontrollers, BLE, RFID Tags.
- Uses Indoor and low light energy > 100 lux, and movement for power
- Includes Power Supply, Microcontroller, API, Communications, and interfaces to your choice of consumer and commercial Sensors, ID badges, etc.
- Configurable Microcontroller allows you to manage power and communications.
- Two communications add-ons are currently available. Boosted Passive RFID chip for increased range (12 - 20ft) and reliability, and micro controller with integrated ultra low powered Bluetooth chip able to send BLE Beacons.
- BLE option adds enhanced functionality to track devices in realtime for positioning purposes.
- Built-in Communication (BLE Messaging is default)



### Specifications

- Operates on harvested light (> 100 lux) and kinetic energy
- Full recharge in as little as 4 seconds
- Min. Dimension: 48mm x 48mm x 15mm
- Power Converter Type: Linear
- Startup Power: 1.2  $\mu$ Wmax
- Output voltage: 1.1 V-5.2 V
- Small set capacitor: 400  $\mu$ F (expandable)
- Super Capacitor: 0.2F (expandable)

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### Add-on Application Modules

- Passive RFID Tag
- 48-MHz ARM® Cortex®-M0 microcontroller
  - 32-bit processor (0.9 DMIPS/MHz)
  - 128-KB/256-KB flash with 16-KB/32-KB SRAM
- Bluetooth 4.1 compliant Bluetooth Low Energy radio.  
Configurable for ID Tags, Sensors, Custom signal strength
  - -91-dBm Rx sensitivity, up to +3-dBm Tx power



### Related Products

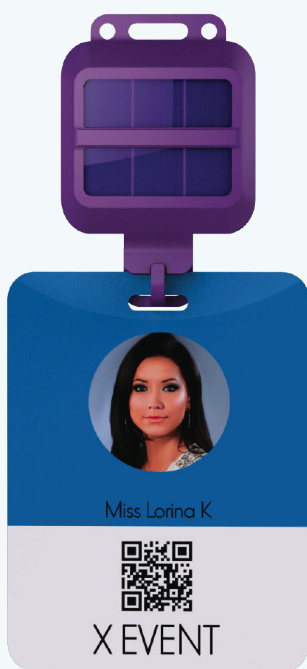
The following products close the loop when designing and deploying solutions

- RFID Scanner
- Bluetooth Beacon Scanner combined with our Mesh network



### Applications/Use-Cases

- ID Badges for Attendee Tracking and Event Lead Retrieval
- Shipping Container Monitoring
- Emergency Beacon/Transponders for marine, remote locations, etc.
- Temperature Sensor
- ePaper Display
- Engine Sensors for RPM, Temperature, Voltage, Speed, Depth



Bluetooth ID badge

For more information contact:

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