SCPS Coin Battery

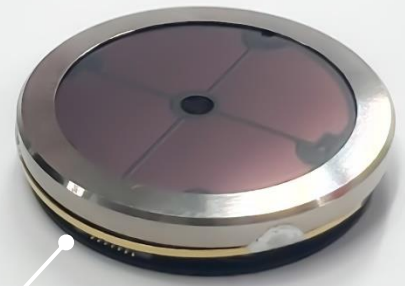
SCPS (**S**elf-**C**ontained **P**ower **S**upply) Series

SCPS Coin Battery

Patent Applied

Features

- Energy harvesting module that can replace **CR2032** coin cell battery
- Rechargeable by solar power generation
- Embedded Ultra low-power BLE 5.3
- Integrated PV cell structure
- Replaceable PV cell (single cell to multi cell)
- Supports Far-field wireless charging (with external antenna)
- SMT-capable



RF & Sensors

- Ultra low-power BLE 5.3
- Acceleration sensor
- Temperature/humidity sensor
- Magnetic sensor

Powered by EnerCera battery

NGK INSULATORS

EnerCera Coin: ET1210C-H

SCPS Coin Battery

We offer a quick replacement for coin cell batteries.

Patent Applied

Energy harvesting module that can replace CR2032 coin cell batteries. Battery, PV cell, BLE, and various sensors are integrated into one compact module, making it possible to upgrade existing devices to energy harvesting compatible devices without changing the design as much as possible.

Main applications: Remote controls, IoT sensors, Trackers, Key Fobs, PC Peripherals, Bicycle Accessories, etc.

SCPS Coin Battery

Patent Applied

Our unique 3D structural design incorporates the following advantages.

PV cell could be clipped by SUS case

- ✓ Better contact between PV cell and terminals on PCBA
- ✓ More robust structure

VDD contact on side same as CR2032

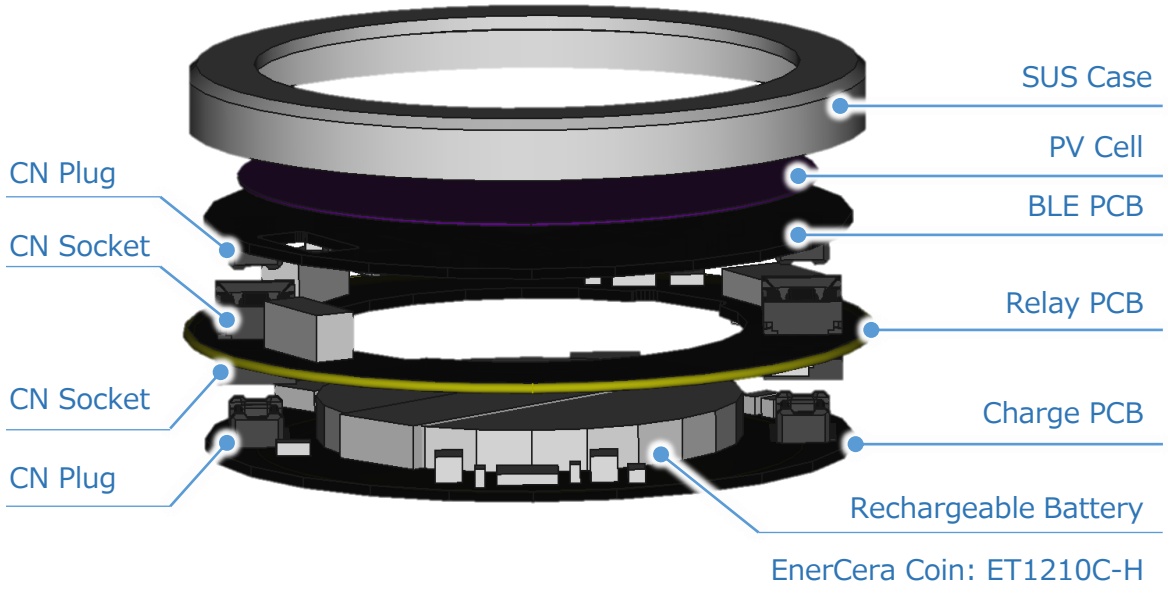
- ✓ Higher compatible design with original CR2032
- ✓ No wiring required for user trials

VDD and GND pads are solderable

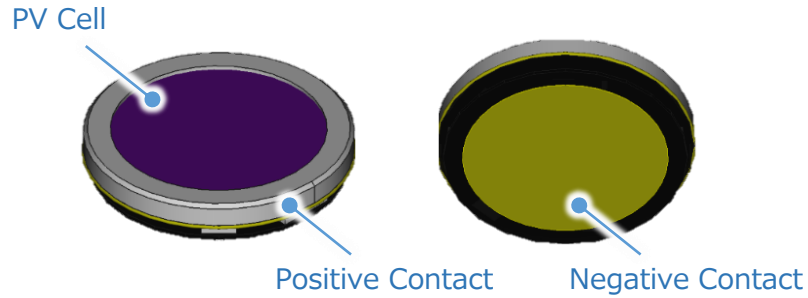
- ✓ No battery holder required with soldering on PCBA

Push SW and magnetic sensor for user trigger

- ✓ More capabilities with lower power consumption in BLE-SoC firmware could be developed



EnerCera Coin: ET1210C-H



SCPS Coin Battery

Patent Applied

General

Size	φ20mm x 3.2mm (Compatible w/ CR2032)
Weight	TBD
Battery Capacity (EnerCera Coin: ET1210C-H)	4mAh
Output Voltage	3.0V ±2%
Discharge Current (Max)	15mA

Energy Harvesting

PV Cell	φ16mm (Active Area), 4 Cells
Solar Harvest Current [Vop 2.5V]	5uA @200Lux 100uA @ 5000Lux
RF Harvest Frequency *	400MHz to 2500MHz
RF Harvest Input @ 918MHz *	-18 to 10 dBm
RF Harvest Input @ 2450MHz *	-15 to 10 dBm

* RF Harvest requires external antenna.

Sensors

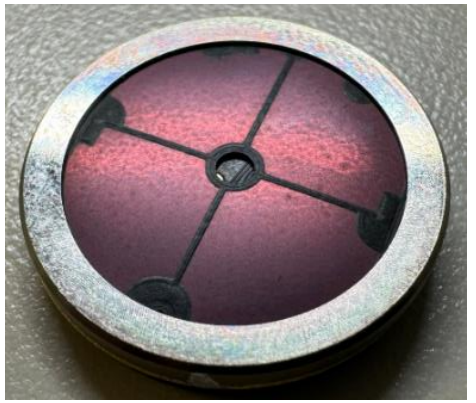
Triaxial acceleration sensor (BMA456)	16bit Digital, Acceleration ranges ±2g/4g/8g/16g
Humidity and Temperature sensors (HDC2010)	Relative humidity range: 0 to 100% Humidity accuracy: ±2% Temperature range: -40 to 85℃ Temperature accuracy: ±0.2℃
Hall Effect sensor (DRV5032)	Magnetic threshould: 9.5mT, Omnipolar

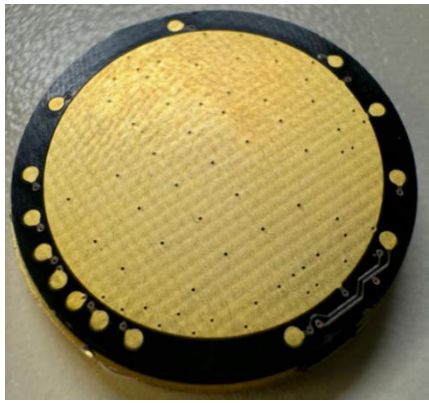
Wireless Communication

Bluetooth Low Energy 5.3
Tx @ 0dBm: 3.0mA
Rx @ -95dBm: 1.4mA

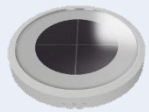
MCU

64MHz ARM Cortex M33F
64KB ROM, 128KB RAM, 512KB NVM





Energy Harvesting Platforms – SCPS Series

Series		SCPS Remote	SCPS Curve	SCPS Card	SCPS Tube	SCPS Disk	SCPS Coin
Model Generation		1st Gen (2019)	2nd Gen. (2020)	3rd Gen (2021)	4th Gen. (2022)	5th Gen (2023)	6th Gen (2023)
							
RF	Bluetooth	●	●	●	●	●	●
	LoRa					●	
	Wi-Fi					● (Wi-Fi Scanner)	
	GNSS					●	
Power Supply	Solar		●	●	●	●	●
	Far-field Wireless	●	●	●	●	●	●
	USB-C				●		
Sensor	Temp./Humidity			●	●	●	●
	Luminance			●	●	●	
	Accelerometer			●	●	●	●
	Microphone			●	●	●	
	Gas (Co2)			●	●	●	
	Pressure			●	●	●	
	Magnetic						●
Button		16	12	6	1	1	1
Battery		None	None	20mAh	None	20mAh	4mAh
Display					●		
Waterproof						IPX7	

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