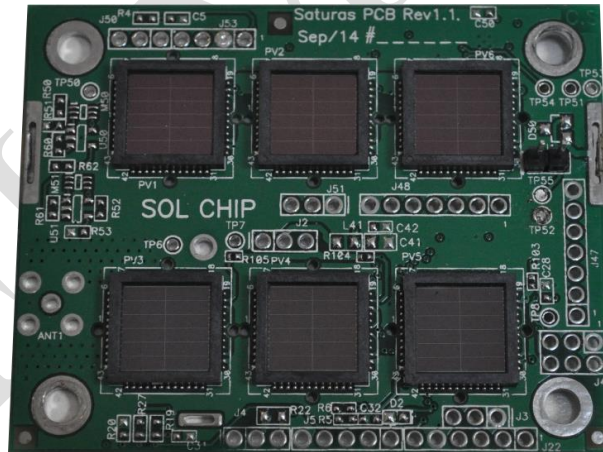


Sol Chip Pak™ Product Description

SCP-R6400



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1. Features

- Sol Chip Pak™ integrated Solar Cells (Saturn400) with Rechargeable Battery and Power Management circuitry
- Recharge the internal rechargeable battery from outdoor visible light
- Output voltage is set to vary between 2.5V-3.5V by default – output voltage range can be altered according to customer's request (*).
- Average output current of up to 750 uA from the integrated Solar Panel – see Technical Information below
- Up to 1.5 Amp peak output current – see Technical Information below
- Continue to provide power for 24 hours a day, even during harsh outdoor conditions
- Rechargeable battery capacity of 1100mAh
- Can be purchased as:
 - Dual PCB Solution – Two PCBs, one consisting of the Solar Cells and one consisting of the Power Management circuits (Battery charger + Battery). PCBs can be placed in separate locations allowing more flexibility.
 - Single PCB Solution – One PCB which consists of both the Solar Cells and the Power Management circuits.

2. Applications

Wireless Sensor Networks (WSN) and Wireless Sensors (WS) for:

- Smart cities - smart lighting, smart parking etc.
- Agriculture - drip irrigation, disease detection, vineyard monitoring etc.
- Asset positioning and tracking – equipment, containers (on ships and trains)
- Livestock positioning, monitoring and tracking, pets tracking
- Surveillances, security and safety
- Environmental monitoring – gas, fire, pollution and floods detectors
- Structural health monitoring
- Power grid monitoring
- Transportation – cars/tracks authentication, toll roads management (EZPass), bicycles alert, sports equipment on bicycles etc.
- Gas pipes monitoring

(*) Depends on technical limitations. Contact info@sol-chip.com for more information.

3. Description

Sol Chip Pak™ includes all the components that are required to harvest energy from light, charge rechargeable battery and deliver a stable voltage to the Load (see Figure 1 – Sol Chip Pak™ Block Diagram).

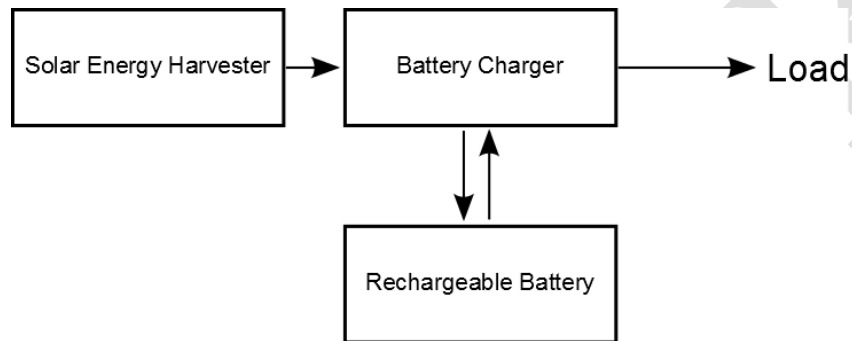


Figure 1: Sol Chip Pak™ Block Diagram

1. Solar Energy Harvester – harvests solar energy and produces electric power
2. Battery Charger – charges the battery, protects from over-charge and protects from over-discharge
3. Rechargeable Battery – stores the energy harvested by the Solar Energy Harvester

4. Sol Chip Pak Images

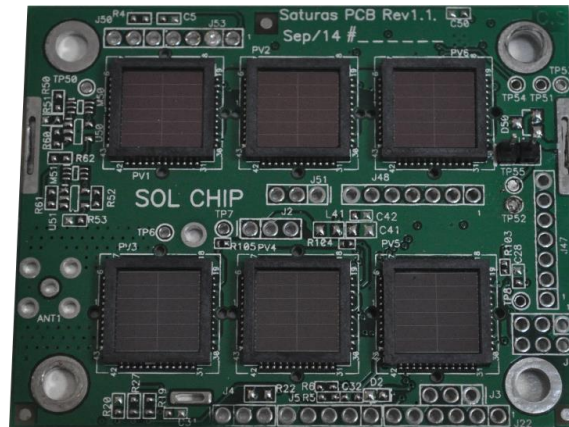


Figure 2: Solar Cell PCB

PCB Dimensions – 7 X 5.5 X 0.5 cm (L x W x H)

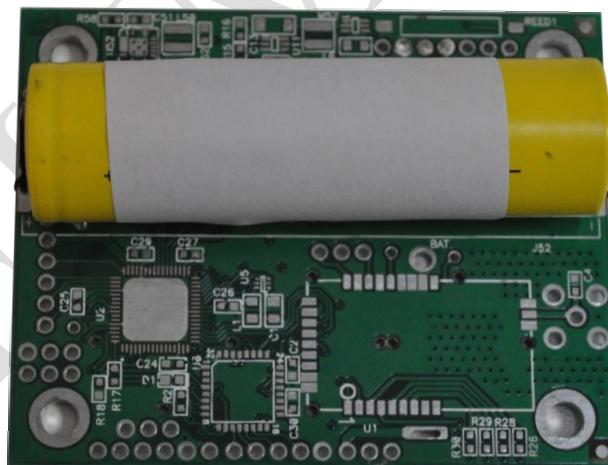


Figure 3: Power Management PCB

PCB Dimensions – 7 X 5.5 X 2 cm (L x W x H, with battery)

5. Technical Information

Output Voltage*	2.5V – 3.5V Volts - For more info regarding possible voltage ranges, please contact info@sol-chip.com .
Average Yearly Output Current	Up to 750 uA from the integrated Solar Panel ⁽¹⁾
Peak Output Current	Up to 1.5A ⁽²⁾

Average Output Current from Solar Panel

(1) Average Output Current depends on the exposure to light per day. Yearly average current is as follows:

Location	Average Output Current
Tel Aviv, Israel	750 uA
London, Great Britain	400 uA
Sidney, Australia	700 uA
San Francisco, CA, USA	700 uA
Paris, France	420 uA
Toronto, Canada	520 uA
Dublin, Ireland	380 uA

Table 1: Average Output Current from Solar Panel per location

For Average Output Current in more locations, please contact info@sol-chip.com

Peak Output Current

(2) Peak Output Current is dependent on acceptable voltage drop (see Table 2). It is important to note that higher peak output currents will increase the average output current needed from system.

Peak Output Current [mAmp]	Voltage Drop [mV]
150	80
300	160

Table 2: Peak Output Current – Voltage Drop

6. Ordering Information

Part #	Configuration Type
SCP-R6400-D	Dual PCB: One PCB consisting of the Solar Cells and one consisting of the Power Management circuits (Battery charger + Battery).
SCP-R6400-S	Single PCB: One PCB which consists of both the Solar Cells and the Power Management circuits (Battery charger + Battery).

Table 3: Ordering Information