

The SunCore Integrated System



- Continuously charges batteries indoors and outdoors
- Twice the output of traditional batteries in the same space
- Ideal for cell phones and Smartphones

A sleek, fully-integrated, light-powered charging system



SUNCORE CORPORATION INTRODUCES a new category of solar-based mobile power products that can increase how long mobile communication devices can operate between battery charges. Today's Smartphones, MP3 players and other portable electronics deliver more battery-draining features. Traditional battery technology can no longer keep up, while alternative solar approaches have been inadequate.

SunCore's technology breaks the battery bottleneck by turning both solar and artificial light energy into operating power for mobile devices, as well as surplus power to offset power drain in the device's on-board battery. SunCore's unique light-powered technology continuously charges by working in ambient light or sunlight. No other powering-approach offers the same combination of charging speed and efficiency, in a single package form-factor that doesn't alter the original dimensions or design style.

This improved charging performance satisfies consumers' desire for longer lasting battery power, driving demand for next generation mobile devices and multifaceted applications.

PERFORMANCE In the solar-based charging arena, SunCore's system develop 100-200 mA of charge current depending on the device size (PV panel size) and lighting conditions. A SunCore-fitted device exposed

to ambient light will deliver a robust charge to the device battery. The stronger the light level, the greater the charge delivery. A continuous charge all day long can mean a fully-charged battery, and a happy user. The light-powered charging system can be integrated at any point in the mobile device's production pipeline, either as an accessory or shipped integral to a newly marketed phone.

PROPRIETARY TECHNOLOGIES SunCore's light-powered charging system uses proprietary photovoltaic (PV) panel technology to harvest light energy with a sensitivity range of 300 to 1200 nanometers, well beyond the visible light spectrum. The systems' microcontroller-based charge-management circuitry and software optimizes the absorbed energy's high-efficiency transfer from the PV panel to the battery, as the device is moved within varying light conditions. Manufacturers can also program the system for specific battery performance and other device requirements.

MOBILE COMMUNICATION AND SMART ENERGY CONVERGENCE

The abundant, clean energy of light is an intelligent answer to consumers' demand for advanced device features, while championing the importance of eco-friendly power alternatives. SunCore systems have many green advantages that can quickly move a manufacturer to the forefront of the eco-product revolution.

TECHNICAL FEATURES

CIRCUIT SPECIFICATIONS

- Programmable Battery Temperature Range
- Programmable Hysteresis and timing on External Input Detect
- Programmable Hysteresis on Temperature Detect
- Safety Timer
- Maximum Power Point Tracking (MPPT) of the PV panel
- Stepped Charge Current to reduce EMI
- Light Positioning Indicator on battery cover continuously displays charge strength under various light conditions
- Automatic System Off after device connects to external charge input supply (USB cable to wall outlet)
- Existing mobile device internal charger circuit unchanged
- Charger Circuit Efficiency: 95%
- CC/CV Charge Algorithm: no trickle charge
- Energy Harvesting with Reduced Current Charge: down to 5mA
- Compensates for PV voltage variations: continues to regulate charge over operational battery range
- High Impedance Mode for low power consumption
- High Accuracy Voltage (+/-0.5%) and Current (+/-5%) Regulation
- Programmable Termination Current: 5mA, 10mA, 15mA
- Programmable Maximum Battery Regulation Voltage: 3.52 to 4.44 in 20mV steps

PHOTOVOLTAIC SPECIFICATIONS

- Photovoltaic Panel Efficiency: >18 to 20%
- Thermal Isolation of PV Panel from battery
- PV Panel: Vmp 4.56
- PV Panel: Imp up to 110mA
- PV Panel Size adopted to its placement on device
- PV Panel and Charge-management Circuitry integrated into battery cover: connectors link the new PV battery cover to the on-board battery
- Programmable for specific on-board lithium battery performance and other requirements
- Adds 3-5 grams to handset weight

Technical specifications assuming a PV panel surface size of 4cm x 6cm.

EXTERIOR CONSTRUCTION

EXTERIOR FACEPLATE Impact-resistant ABS plastic

PV PANEL SURFACE Transparent nylon, full-spectrum, scratch-proof and impact-resistant

LIGHT POSITIONING INDICATOR LED visible on faceplate continuously measures the light environment

A SUNCORE-FITTED PV PANEL HANDSET



Device retains original dimensions and design style.

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