

iSense Solar Power Harvesting System

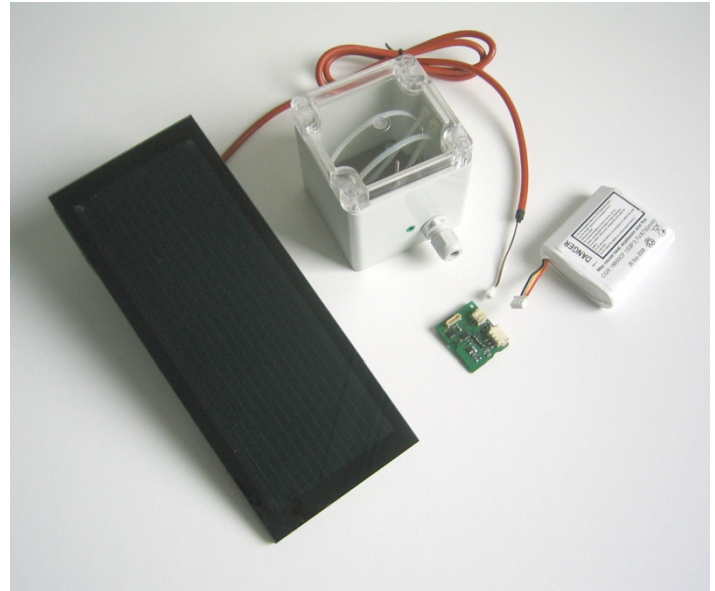
Preliminary product brief

Product

The iSense Solar Power Harvesting System is an out-of-the-box solution for running self-powered wireless sensor networks. By harvesting solar energy and storing it in a rechargeable battery, it allows to operate sensor nodes all-time autonomously.

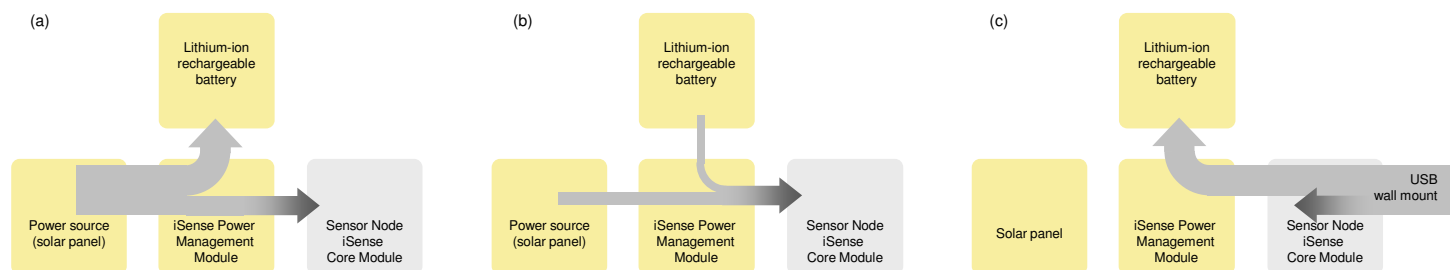
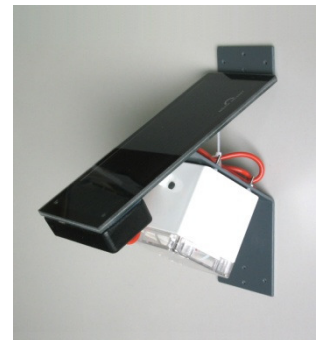
The iSense Solar Power Harvesting System consists of a solar panel, an ultra-high capacity lithium ion rechargeable battery, a power management module and a sensor node housing.

The power management module distributes the power provided by the solar panel in an intelligent way. If the panel can deliver more power than the sensor node requires, it charges the lithium ion battery (a). Otherwise, it reduces the battery drainage by partially supplying the node with the solar power (b). When power is supplied to the connected iSense Core Module via USB or a wall mount adapter, the battery is automatically charged (c).



Components of the iSense Solar Power Harvesting System: solar panel, housing, power management module and rechargeable lithium-ion battery

Solar Power Harvesting System including its wall mounting facility.

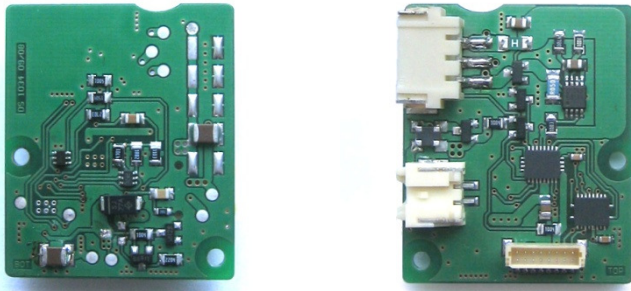


Different current flows through the iSense Solar Power Harvesting System

The iSense Power Management Module does not only control current flows, additionally an integrated battery monitor provides precise information on the energy currently stored in the battery, accumulating both charging and discharging cycles, as well as

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Top and bottom view of the iSense Power Management Module

information regarding the battery voltage, the current consumption and temperature.

Combined with an iSense Core Module and iSense Sensor Modules, self-powered sensor nodes for years of autonomous operation can be plugged together.

Ordering Information

Solar Power Harvesting System SPS10HES6C

consisting of

Solar Power Management Module	SPM10
Solar Panel 1.6W	SP10W16
Li-ion-Battery 6750mAh	BLI6
Solar housing	H10SPS
Power cable	CP6
Wall holder	WH10

Power Management Module

Standby Current	75 μ A
Input Voltage	4.35 to 12 V
Output Voltage	2.5 to 5.0 V
Weight	8 g
Dimensions	30 x 37 mm
Temperature range	-20 to 70°C

Housing

Dimensions	81 x 82 x 87 mm
Protection Level	IP 66
Weight	206 g

Battery

Nominal Voltage	3.7 V
Nominal Capacity	6750 mAh
Cable Length	~ 45 mm
Dimensions	67 m 59 x 19 mm
Weight	136 g
Charge temperature	2 to 44°C
Discharge temperature	-25 to 70°C

Solar Panel

Nominal Power	1.6 W
Current at MPP	250 mA
Voltage at MPP	6 V
Open Circuit Voltage	8 V
Cable Length	~ 0.9 m
Dimensions	100 x 240 mm
Weight	460 g
Temperature range	-40 to 85°C

This product brief shows the specification of a product in planning or in development. The functionality and electrical performance specifications are target values and may be used as a guide to the final specification.