The Genesys Solar Charger Module is an integrated solution for charging various battery chemistries via solar power or other auxiliary sources. Combined with an inexpensive solar panel, the Solar Charger Module enables M2M/IoT devices to function without mains power. Inbuilt battery and solar panel monitoring allows remote diagnosis and preventative maintenance of field equipment.

**BATTERY PROTECTION + MANAGEMENT**

The Solar Charger Module is natively compatible with Lead Acid batteries and contains circuitry to protect the battery and board from overcharging, overdischarging, overtemperature, over-current and reverse polarity events.

**LITHIUM-BASED CHEMISTRY SUPPORTED**

When combined with the Genesys Lithium Battery Protection Accessory Board (GBW-XN-200), the Solar Charger Module is able to charge and monitor Lithium-based batteries with extended safety protection and monitoring.

**SOLAR OR MAINS UPS FUNCTIONALITY**

The Solar Charger Module is ideal for keeping a UPS battery topped up, or in applications when mains power is unreliable or unavailable. An auxiliary DC power input and a managed battery output are provided to fulfil this function.

**CHARACTERISTICS OVERVIEW**

**DIMENSIONS**

86mm x 53mm

**CONNECTIVITY**

- Genesys Modular Stack dual 40-pin connector
- 9-Pin Spare IO connector (with GPIO, 3v3 and ADC connectivity)
- Battery power; Managed battery output
- SMB interface for "smart" batteries
- Solar and Auxiliary power inputs

**SUPPORTED BATTERIES**

- Lead Acid Batteries natively supported
- Lithium Chemistry Batteries are compatible with Lithium Battery Protection Accessory Board (GBW-XN-200)

Genesys Modular Stack (GMS) is a technology allowing for the easy interconnection of expansion modules. GMS compliant modules feature a characteristic pair of board-to-board feedthrough connectors, so that they are infinitely stackable with each module adding new functionality. The Solar Charger Module is fully GMS compatible.
CHARACTERISTICS

CONNECTORS
- Solar Input, Auxiliary Input, Battery Input and Battery Output power connectors
- SMB-based interface connector for “smart” battery accessory boards
- Spare IO connector with support for:
  - 3V3 Power
  - 5 GPIO Channels
  - 2 ADC Channels
- Genesys Modular Stack dual 40-pin connector:
  - 3V3 Power
  - 1 UART
  - Serial Peripheral Interface (SPI)
  - Inter-Integrated Circuit (I²C)
  - General Purpose Input/Output

MEMORY
- 2kb Serial EEPROM with Factory-Programmed EUI-48™ Address and Embedded Unique 128-bit Serial Number

POWER
- Genesys Modular Stack 3V3 Power Load:
  - <70μA (Static with all LEDs on)
  - 2mA (Dynamic)
- Battery Charge/Discharge:
  - up to 3A (Input/Charge Current)
  - up to 5A (Output/Discharge Current)
- Quiescent Power Draw:
  - 25mA (Typical Solar Current Draw Excluding Charge Current)
  - <3mA (Solar Current Draw when Idle)
  - <1mA (When Charging Disabled)

ENVIRONMENTAL
- Temperature (operating): -15°C to +55°C
- Temperature (survival): -55°C to +85°C
- Humidity (operating): 95% RH at 50°C

PHYSICAL
- Dimensions: 86mm x 53mm

SUPPORTED BATTERY CONFIGURATIONS
- Pack voltages of 2.1 - 26V
- Lead Acid (Directly Supported) with over-discharge protection
- Lithium-based when used with Genesys Lithium Battery Protection Accessory Board (GBW-XN-200)

SUPPORTED SOLAR PANEL CONFIGURATIONS
- Solar Panels with 5 - 28V Open-circuit Output
- Up to 80W panels recommended
- Maximum Power Point Tracking

SOLAR CHARGER MODULE
SOLAR CHARGING and BATTERY PROTECTION MODULE with MAXIMUM POWER POINT TRACKING

Product Code: GBW-MH-200

CALL US ON +61 2 9496 8900
Unit 5, 33 Ryde Road
Pymble NSW 2073 Australia
enquiries@genesysdesign.com.au