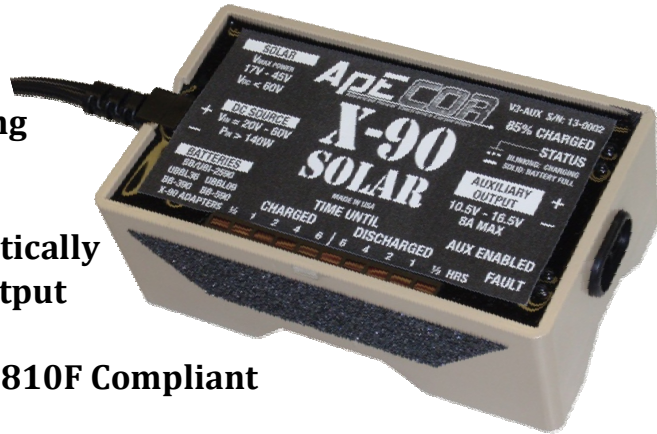


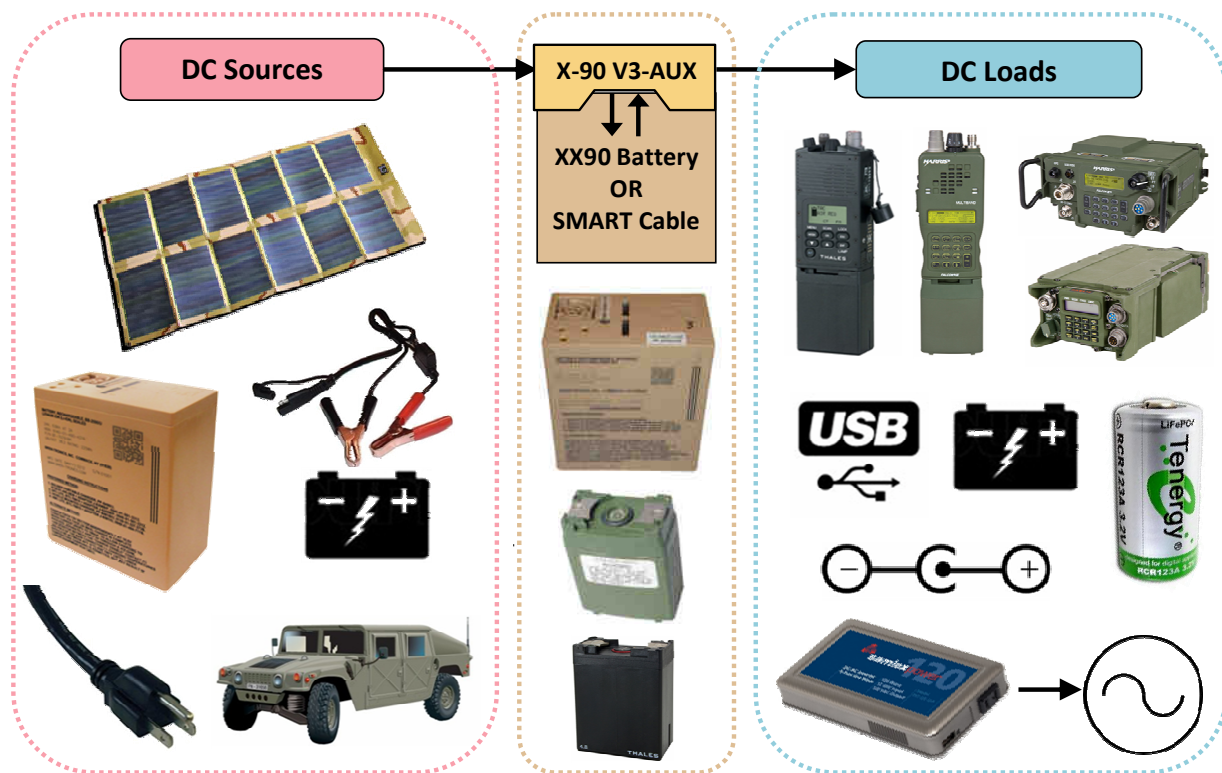
X-90 Solar V3-AUX: Fast-Charge Solar Power Manager

Features

- ◆ **Maximum Power Point Tracking**
 - Up to 30% more power
- ◆ **Universal Charging Algorithm**
 - Identifies chemistry automatically
- ◆ **Protected 12V/8A auxiliary output**
- ◆ **No User Input Required**
- ◆ **Fully Ruggedized Design - MIL-810F Compliant**
- ◆ **Field Replaceable Sense Pins**
- ◆ **Fully Protected, including Reverse Polarity, Over Temperature, Active Current Limiting, and Battery Disconnect Recovery**
- ◆ **Integrated "Time Until Charged/Discharged" Calculator**
- ◆ **Compatible with "Smart X-90" adapters, for operation with other battery types**
- ◆ **Emergency regulated 14.4V Aux output when there is no battery connected**
- ◆ **Auto dimming LED indicators reduce the brightness when there is no input power**



Supported Batteries	Chemistry
BB/UBI-2590/U	Li-Ion
BB-590/U	NiCd
BB-390B/U	NiMH
UBBL09	Li-Ion
UBBL36	Li-Ion
Smart Adapter	Numerous



Selected Products and Accessories

<p><u>AP13 – X-90 V3-AUX</u></p> 	<p><u>AP13001 - XX90 Scavenger Cable</u></p> 	<p><u>AP13002 - BA-5590 28V Emulator Cable</u></p> 
<p><u>AP13003 – 12V to 28V Boost Regulator</u></p> 	<p><u>AP13004 - AUX Power Y-Cable</u></p> 	<p><u>AP13005 - AUX Power 4-Way Cable</u></p> 
<p><u>AP13006 - Universal AC/DC Converter - 150W</u></p> 	<p><u>AP13007 - PRC-148/152 Battery Eliminator</u></p> 	<p><u>AP13008 - Rugged 2.1A USB Charger</u></p> 
<p><u>AP13009 - RCR123A Battery Charger + 6 Batteries</u></p> 	<p><u>AP13010- Spring Pin Replacement Kit -X6 or -X12</u></p> 	<p><u>AP13014 - DC Input/Output Alligator Clips -IN or -OUT</u></p> 
<p><u>AP13018 - 12V Barrel Plug Cable - 1.4mm or -2.5mm</u></p> 	<p><u>AP13019 - NATO Input Cable</u></p> 	<p><u>AP13020 - Ruggedized AA/AAA Fast Charger</u></p> 

Selected Products and Accessories (cont'd)

AP13023 - Stubby 1-into-2 SAE Y Cable



AP13024 - 12V Cigarette Lighter Socket – 3", -12", or -18"



AP13027 - SAE Extension Cable, -24", -36", or -8'



AP13029 - PRC-148/152 (MBITR) Battery Charging Smart Cable



AP13038 - X-90 Pouch Slick



AP13038 - X-90 Pouch Deluxe



AP13040 - Scout Kit Bravo



AP13041 - Mobility Kit



AP13043 - 30W 1.8 lbs Foldable Solar Panel



AP13044 - 62W 3.2 lbs Foldable Solar Panel



AP13046 - 40W High Efficiency 1.8 lbs Foldable Solar Panel



AP13047 - 80W High Efficiency 3.2 lbs Foldable Solar Panel



AP13048 - BB-2590 216Wh - 3.1 lbs



AP13049 - BB-2590 HC 250Wh - 2.95 lbs



AP13050 - 1/2 BB-2590 150Wh - 1.6 lbs





X-90 Solar V3-AUX Power Manager

Quick Start Guide and Application Information

X-90 V3-AUX Operation

The X-90 Solar Charger is a portable solar battery charger and power manager capable of charging a wide array of typical portable rechargeable batteries. The charger features advanced digital control, which enables automatic battery detection, maximum power point tracking (MPPT) of the solar panel, and value-added features such as a protected 12V output, a "time until charged/discharged" calculator, and the ability to use "X-90 Smart Adapters" for charging numerous other types of batteries. The charger is able to operate from any solar panel configuration with $V_{open\ circuit} < 60V$. The charger directly plugs onto the top of the supported batteries, and the only wiring needed is the connection to the solar panel or DC source using a polarized SAE plug. The advanced charge controller minimizes charge time and continually monitors critical parameters to ensure safety and reliability. The implementation of high-speed MPPT delivers maximum charging current, even in low light or poor weather conditions. The simple LED interface informs the user of the system status, and if there are any fault conditions.

Possible Connections to the X-90 V3-AUX

DC Sources	Batteries	DC Loads
<p>Available Accessories: AP13001 - XX90 Scavenger Cable AP13003 - 12V to 28V Boost Regulator AP13004 - AUX Power Y-Cable AP13005 - AUX Power 4-Way Cable AP13006 - 150W AC/DC Converter AP13014-IN - DC Input Alligator Clips AP13015-IN - DC Input Ring Terminals AP13019 - NATO Input Cable AP13023 - Stubby 1-into-2 SAE Y Cable AP13027 - SAE Extension Cable</p> <p>Solar Panel: <u>Global Solar Energy, Inc.:</u> AP13043 - P3 30W 24V AP13044 - P3 62W 24V AP13045 - P3 124W 24V AP13046 - P3 40W 24V - High Efficiency AP13047 - P3 80W 24V - High Efficiency</p> <p><u>Other Solar Panels:</u> Open Circuit Voltage <60V Max. Power Voltage >17V</p> <p>DC Source: Voltage Range: 20V - 60V Power Capability > 140W</p>	<p>XX90 Rechargeable Batteries:</p> <p>UltraLife Batteries: UBBL02 (UBI-2590) UBBL10 (UBI-2590 SMBus) UBBL09 (2590 - 12V/24V) UBBL36 (1/2 UBI-2590) UBBL13 (UBI-2590 HC)</p> <p>Mathews Associates, Inc.: BB-2590 SMBus BB-2590/U BB-390A/U or BB-390/U BB-590/U</p> <p>Bren-Tronics: BB-2590/U BB-390B/U BB-590/U</p> <p>Patco Electronics, Inc.: BB-2590/U</p> <p>Available Accessories: AP13029 - PRC-148/152 Battery Charging Smart Cable</p>	<p>Available Accessories: AP13003 - 12V to 28V Boost Regulator AP13004 - AUX Power Y-Cable AP13005 - AUX Power 4-Way Cable AP13007 - PRC-148/152 Battery Eliminator AP13008 - Rugged 2.1A USB Charger AP13009 - RCR123A Battery Charger AP13012 - AA/AAA Fast Charger AP13014-OUT - DC Output Alligator Clips AP13015-OUT - DC Output Ring Terminals AP13016 - 12V Cigarette Lighter Socket - 6' AP13018 - 12V Barrel Plug Cable AP13020 - MAHA Ruggedized AA/AAA Charger AP13023 - Stubby 1-into-2 SAE Y Cable AP13024 - 12V Cigarette Lighter Socket AP13025 - SAE to CLA Socket and SAE Y Cable AP13026 - SAE to Two CLA Sockets Y Cable AP13027 - SAE Extension Cable AP13030 - Ruggedized 4-Bay NiMH/NiCD/USB Charger</p> <p>12V Loads: Need to be able to accept 10.5V to 16.5V with maximum power of less than 120W continuous / 240W peak</p> <p>12V Lead-Acid Battery: Only if no XX90 battery is connected to the X-90, and the battery accepts 8A charge current</p>