

8393 ~ by Edward J. O'Rourke

StarPower Technology – Solar Charging, Power Management and Distribution

Abstract

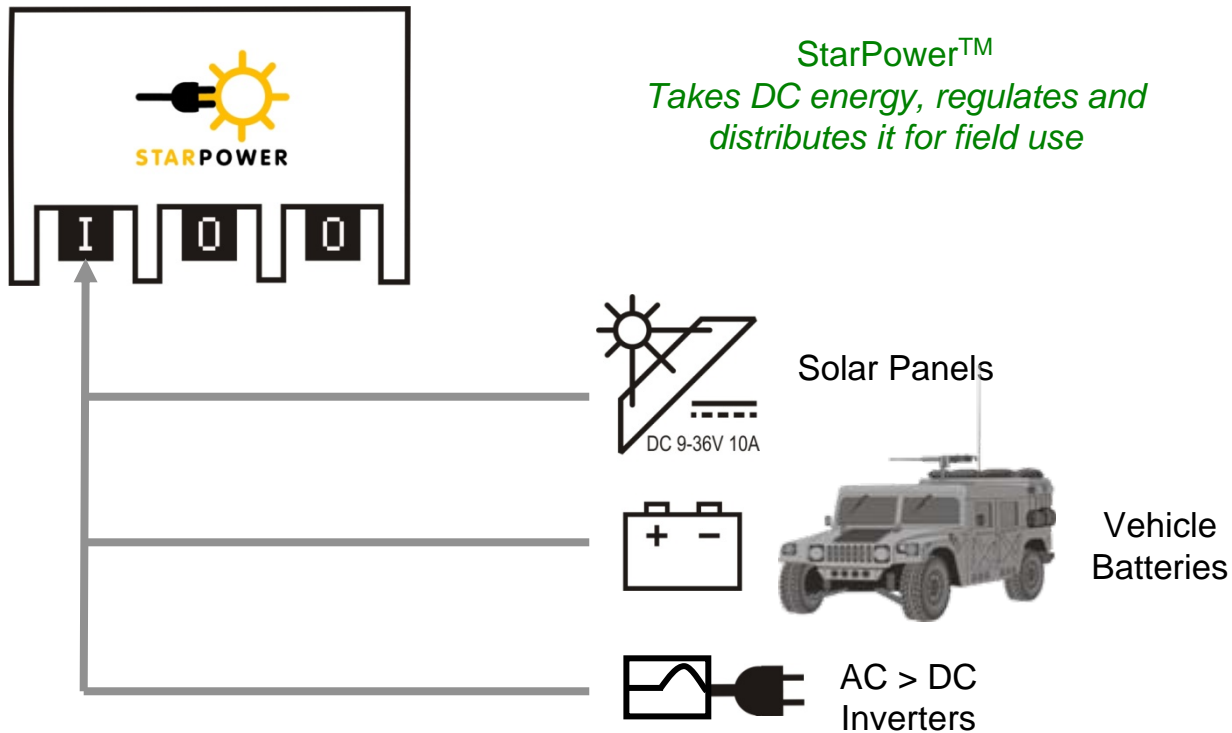


- The Iris Technology StarPower system, in development for more than three years, was recently selected by the Marine Corps to fulfill the comprehensive objectives of their Solar Portable Alternative Communications Energy System (SPACES) / Multifunction Solar Device (MSD) program. Iris is now in production of this equipment suite with product available now.
- We discuss the basic architecture and capabilities of this equipment and the growth options it will afford users for years to come. Based completely on our proprietary software platform, the StarPower is currently able to address any rechargeable battery chemistry, now and in the anticipated future. Natively, it powers all 12/24V tactical radios. StarPower can receive any DC input source (9-36 VDC), charge multichemistry batteries, and/or power any loads (12-32 VDC).
- Iris will detail StarPower benefits including Growth Potential, Flexibility, Interoperability, Javelin Compatibility, BA-5590/U Scavenging, Lightweight, Ease of Use, Safety, and Product Quality.

Equipment Suite



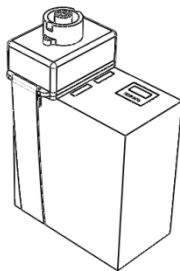
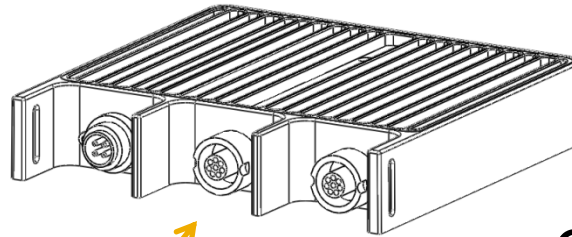
Basic Inputs



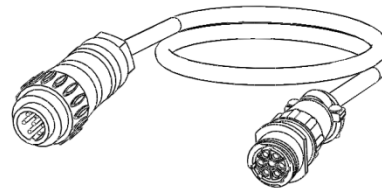
Basic Outputs



Module



StartCap / Battery



EFB Cable

Compatibility with EFB provides interoperability with wide variety of adapters in the DLA system.

EFBA Compatibility



EFBA Device Compatibility List

This is list of the devices compatible with the StarPower™ Unit. This list is not comprehensive; the unit is compatible with any EFBA connector device that accepts 12V / 24VDC power.

AN/PSC-5	5940-01-516-9787
AN/PRC-113	5940-01-516-9787
AN/PRC-117	5940-01-516-9787
AN/PRC-119F	5940-01-504-3218
AN/PRC-119 A/B/C/D	5940-01-504-5597
AN/PRC-148	5940-01-517-3390
AN/PRC-150	5940-01-516-9787

Mission Planning Tool



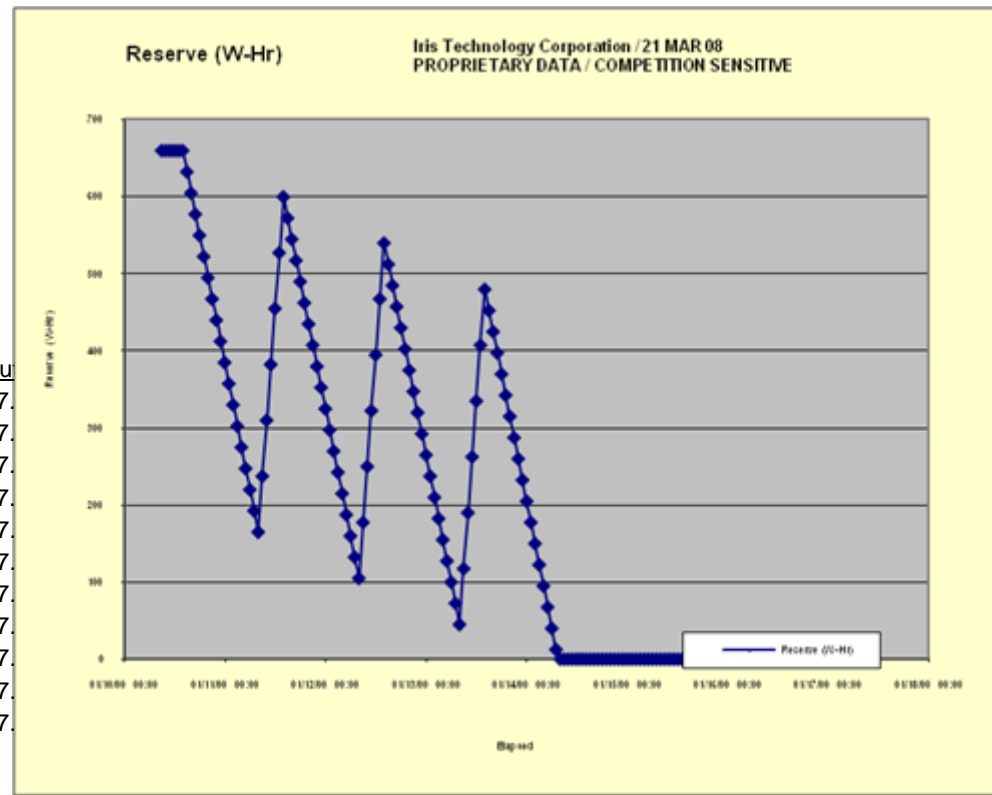
Iris Technology Corporation / 21 MAR 08
 PROPRIETARY DATA / COMPETITION SENSITIVE

Input Power 100W
 Output Power 27.5W
 Energy Reserve 660W-Hr

System Class *Nonsustaining*

Test Start Time 01/10/00 09:00
 Test End Time 01/14/00 07:00
 Test Run Time 94Hr

Time Starting	Input (W)	Output (W)
01/10/00 09:00	100.0	27.5
01/10/00 10:00	100.0	27.5
01/10/00 11:00	100.0	27.5
01/10/00 12:00	100.0	27.5
01/10/00 13:00	100.0	27.5
01/10/00 14:00	100.0	27.5
01/10/00 15:00	0.0	27.5
01/10/00 16:00	0.0	27.5
01/10/00 17:00	0.0	27.5
01/10/00 18:00	0.0	27.5
01/10/00 19:00	0.0	27.5

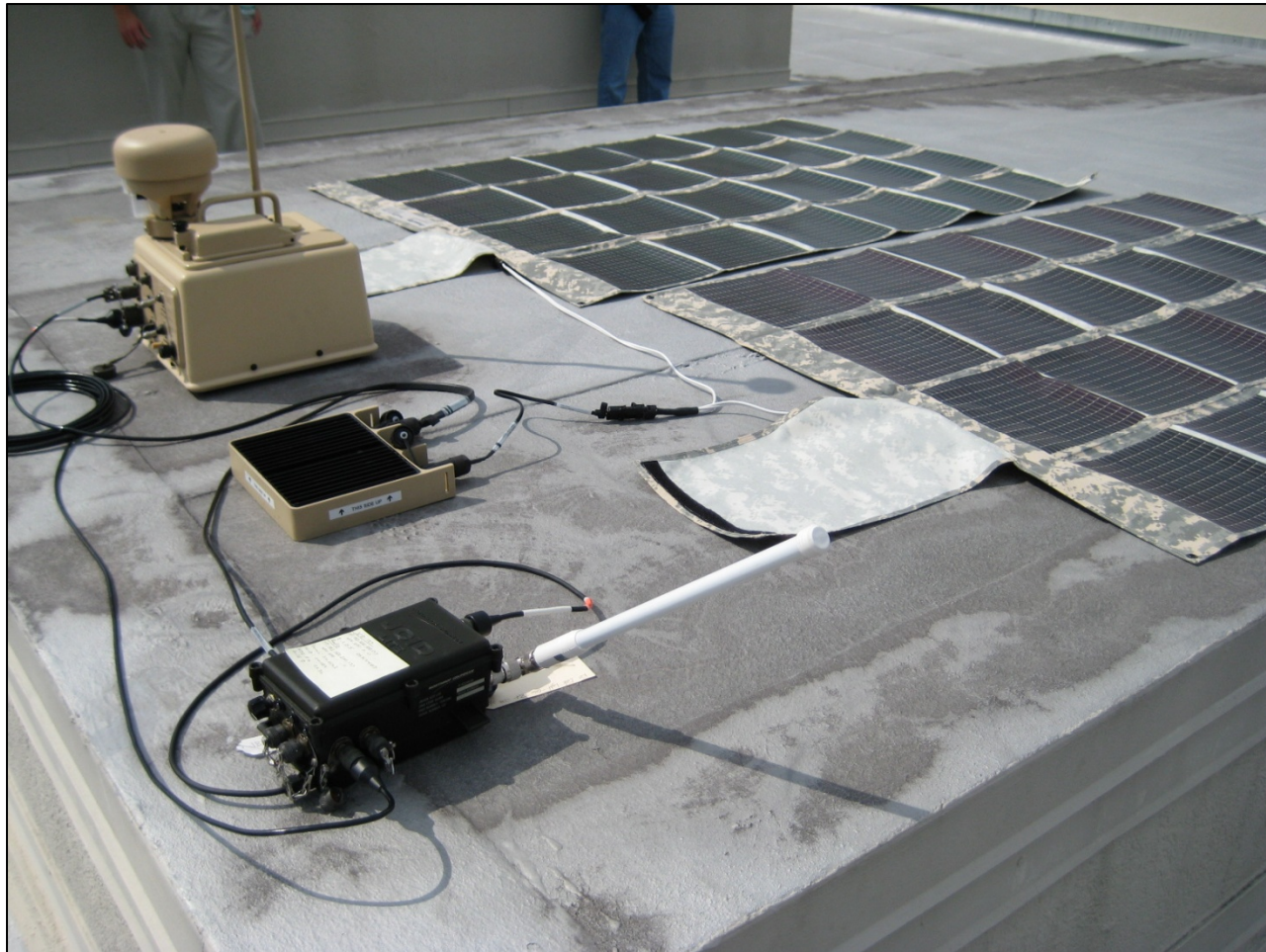


Kestrel ~ AN/PRC-117G

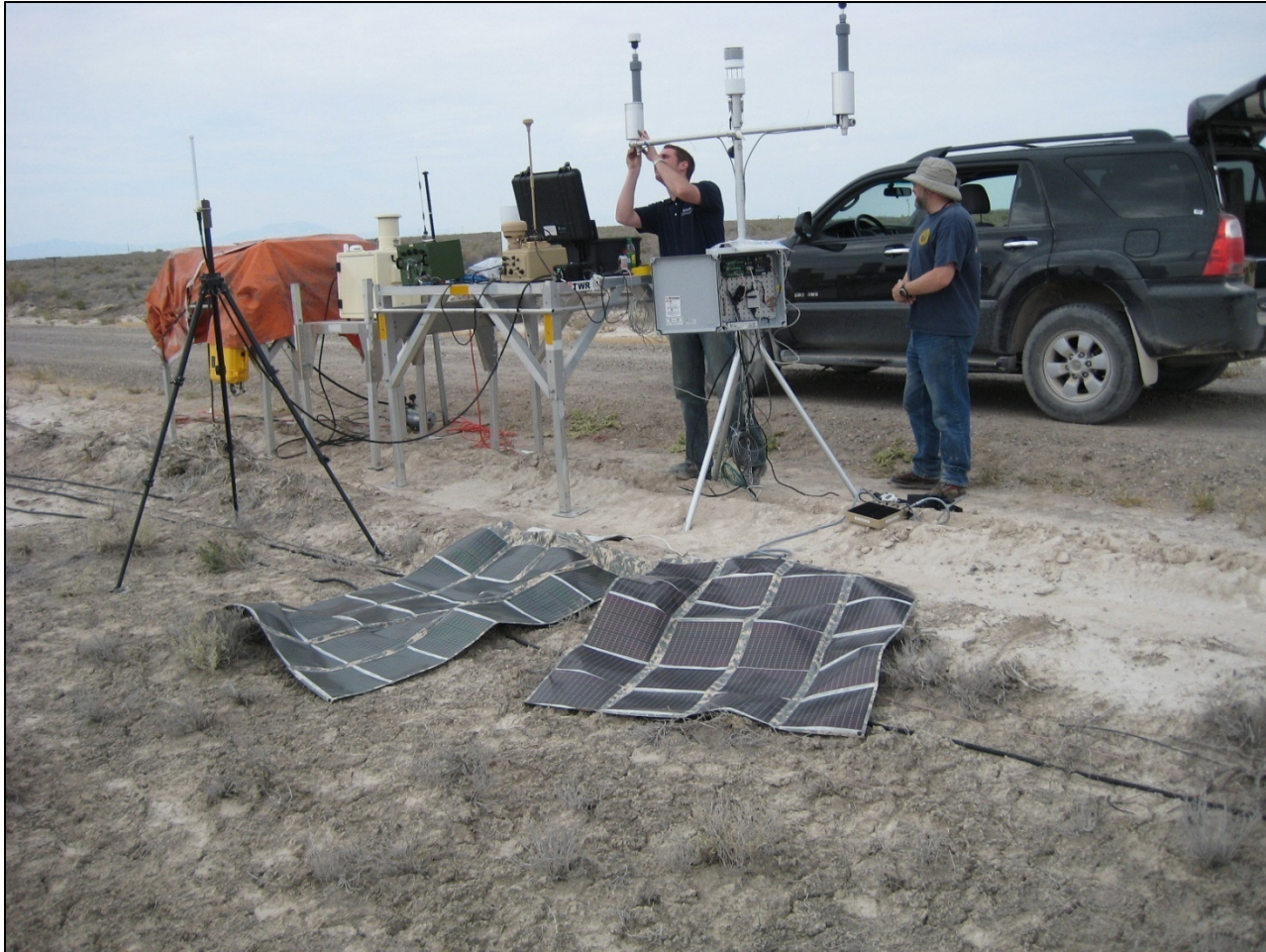


**Interoperable with Iris Technology
Kestrel Adapter for the AN/PRC-117G**

JBTDS ~ JCID / IBAC



Remote Site Testing



Why StarPower (1)



Growth	We're ready when you are. Able to be easily reprogrammed (and without disassembly) through the external connectors, the StarPower module can adapt to future energy storage devices and a multitude of powered accessories unknown today.
Flexible	The StarPower platform powers a variety of DC appliances using our SmartCable technology. Each cable is preprogrammed to request the voltage and current required for any load in the range of 8 – 32 VDC (up to 100W per channel).
Interoperable	The StarPower has been demonstrated with the JBTDS hardware suite and supports multiple DoD and agency missions.
12V COTS	A multitude of 12 VDC appliances can be used safely in native mode including automotive DC/AC inverters to support comfort and convenience items such as cell phone chargers and iPods™.

Why StarPower (2)



Scalability	StarPower systems can be connected into very large arrays to deliver multiple kW of usable power.
Javelin	Because input and output circuits are separate, StarPower can output regulated voltages above or below the battery voltage. This means that Javelin operators can power their weapon system from BB-2590/U using StarPower (BB-390/U will no longer be required).
Converter	Beyond charging batteries, the StarPower system delivers four (4) independently programmable DC outputs from any suitable input supply. This can mean either powering multiple radios from a HMMWV or executing a low power daylight operation directly from a solar blanket. In either case, batteries are not required.
BA-5590/U	Safe for use with all non-rechargeables, StarPower can efficiently and safely scavenge power from BA-5590/U, BA-5390/U, BA-8140/U, and BA-8180/U as well as a multitude of lead acid batteries.

Why StarPower (3)



<i>Lightweight</i>	The lightweight StarPower 400 module can deliver a remarkable 400W at a footprint of only 2.4 lb for a power density of 166 W/lb.
<i>Ease of Use</i>	StarPower was developed with the End User in mind. This technology is inherently plug-and-play with respect to all input and output cables and accessories.
<i>Safety</i>	StarPower automatically identifies battery chemistry and adapts its charging algorithm based upon battery voltages, thermistor (temperature) data, and charge enable pins. No User training or intervention is required. In addition to these important software safety algorithms, StarPower includes at least eight (8) internal hardware protection mechanisms
<i>Quality</i>	Iris manufactures all products on ISO 9000 manufacturing lines to deliver the highest performance to our service men and women.

Questions



- Equipment on display in Booth 314