

ZEROALPHA
SOLUTIONS



TACTICAL

POWER PRODUCTS

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RADIO POWER ADAPTERS

ENABLING COMMUNICATIONS WHERE YOU NEED IT, WHEN YOU NEED IT. NO EXCUSES.



MERLIN RADIO POWER ADAPTERS

Initially designed to power field radios, the Merlin Radio Power Adapters simultaneously recondition the battery, charge reserve batteries, and run other electronic accessories, like tactical laptop computers.

Securely connecting between the radio and the power supply / battery box, Merlin Radio Power Adapters can convert power input from a variety of AC and DC sources, including conformal batteries and solar panels.

Our ruggedized power adapters are "hot-swappable" serving as an uninterrupted power supply (UPS) during battery exchange. Automatic configuration ensures reliable power transfer and ease of use, regardless of conditions.

All Merlin Basic Kits include: module unit, manual and quick reference card. Common kit contents include power brick and various cables based on the connection needs of the customer.

Merlin-Handheld AN/PRC-148 / -148(B)
AN/PRC-152(A)
AN/PRC-159(V)1
AN/PRC-161
AN/PRC-163
RF-330-HH
RF-7800M-HH
RF-7800V-HH
RF-7850-HH
RF-7850S SPR
MBT
MVR IV / MVR VI
Trellisware TW-950

Merlin-2 AN/PRC-117F
AN/PRC-138
AN/PRC-150
AN/PSC-5D

Merlin-3 / 3X AN/PRC-117G
AN/PRC-158
RF-7800H-MP
RF-7800M-MP

MERLIN-HANDHELD RADIO POWER ADAPTER VARIANTS



The Merlin-Handheld RPA, serves as a UPS for the radio, operates as a battery eliminator, and allows the warfighter to power the unit via conformal battery or solar panel.

The Merlin-Handheld offers more power handling capability and the unique ability to export power to application-specific equipment such as end user devices and other peripheral gear, all while charging the battery.



MERLIN-HANDHELD
#115001-X-X-X

- Keep your radio and your device powered at all times.
- Efficient charging capability.
- No loss of communication, receive comm without worry.
- Auto configuration to inputs/ outputs, no controls required.



MERLIN-HANDHELD TW-950
#110501-X-X-X

- Extend your runtime with 148/152 style batteries.
- Recharge on the go with our power scavenging capability.



MERLIN-HANDHELD BATS-D
#110701-X-X-X

- Keep your radio and your device powered at all times.
- Efficient charging capability.
- No loss of communication, receive comm without worry.
- Auto configuration to inputs/ outputs, no controls required.



MERLIN-2 #104901

- Contains software to recondition batteries to ~90% capacity when near or fully discharged.
- Connects directly to battery box containing two BB-XX90 batteries.
- LED indicators display the status of input power, state of charge, battery charging, battery health and output power availability.
- Easily latches to battery boxes without tools or modifications.



MERLIN-3 #107701

- Connects directly to battery box containing single BB-XX90 battery.
- LED indicators display the status of input power, state of charge, battery charging, battery health and output power availability.
- Easily latches to battery boxes without tools or modifications.



MERLIN-3X #104501

- Showcases the best in EMI filtering technology. Won't cause any degradation in receiver sensitivity. In Received Signal Strength Indicator (RSSI) testing, the Merlin-3X was near silent, with no noise above -115 dB.
- LED indicators on both sides of the unit communicate status regardless of orientation.
- Qualified as an OEM device with Harris Corporation and sold as Harris RF-7910.



TACTICAL POWER MANAGERS



EFFECTIVELY MANAGE POWER INPUTS AND INSTALLED ENERGY STORAGE.

MERLIN TACTICAL POWER MANAGERS

Receiving input from a variety of AC and DC power sources, our Tactical Power Managers (TPM) manage power inputs and installed energy storage to run application-specific equipment, laptops, and other accessories. Peak Power Tracking algorithms efficiently convert power from solar panels or other input power to support the load and/or charge batteries for power storage.

Integrating with BX-XX90 lithium ion rechargeable batteries, Merlin Tactical Power Managers provide efficient battery charging and serve as an Uninterrupted Power Source (UPS) for connected equipment. When batteries are not available, it manages power to the DC output port.

The hot-swap feature allows battery change-out and maintenance without load interruption, automatically configuring without controls. LED indicators display the status of input power, state of charge, battery charging, battery health, and output power availability. Compact and rugged, the TPM units do not compromise the environmental integrity of the batteries or attached loads.



MERLIN-2 DBC #110301

- Integrates with two BB-XX90 batteries within the battery box.
- LED indicators display the status of input power, state of charge, battery charging, battery health and output power availability.
- Latches to standard dual lithium ion BB-XX90 battery box without any additional tools or modifications.



MERLIN-2 MULTI-OUTPUT #107301

- Up to 300 W across 3 output connectors.
- Integrates with two BB-XX90 batteries within the battery box.
- LED indicators display the status of input power, state of charge, battery charging, battery health and output power availability.



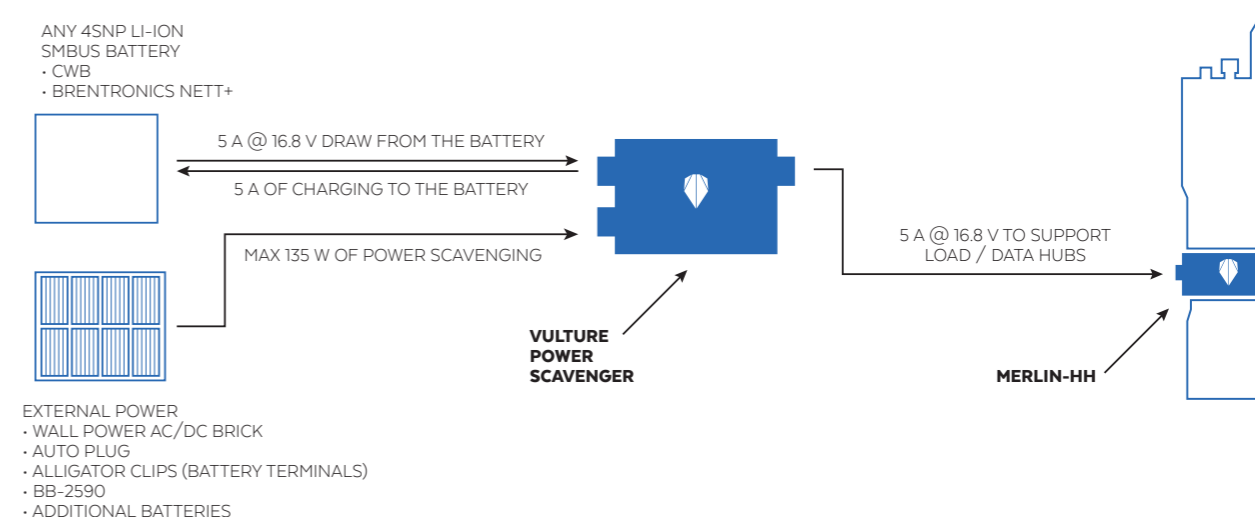
MERLIN-3 SBC #102501

- Integrates with a single BB-XX90 battery within the battery box.
- LED indicators display the status of input power, state of charge, battery charging, battery health and output power availability.
- Latches to standard single lithium ion BB-XX90 battery box without any additional tools or modifications.



VULTURE POWER SCAVENGER #108401

- Connects in-line between a wearable "system battery", a Conformal Wearable Battery (CWB) or 2590 and the rest of the system (radios, DAGR, EUD).
- Can deliver a maximum of 5 A at 16.8 V to assist the battery/system loads.
- "Scavenge" power to offset discharging from the system battery, or charge the battery if there is excess power available.
- Wearable and easily mounts to MOLLE with a 2 x 1 footprint using the included pouch.





HYBRID POWER SYSTEMS

SPACES—FIELD PROVEN AND COMBAT READY MOBILE POWER SOLUTION.

SPACES SYSTEM #103301

THE ULTIMATE MOBILE POWER SOLUTION

The SPACES man portable power system delivers portable power to charge batteries, operate communications equipment and run small electronic accessories in tactical and remote environments.

The power module allows the user to charge multiple BB-XX90 style and 12/24 V lead-acid batteries and distributes power to operate tactical equipment. It receives power from one or more flexible solar panels, various rigid panels, BB-XX90 and zinc-air batteries, fuel cells, or commercial and NATO vehicles. Additional components are available to expand the uses of the system.

FIELD PROVEN

SPACES has been deployed primarily by the United States Marine Corps and used successfully throughout the world including Afghanistan and Iraq.

MOBILE, LIGHTWEIGHT, AND RUGGED

The plug-and-play system can be set up and ready for use in less than a minute. The self-contained kit comes in a rigid, waterproof case. Foam inserts secure the equipment, with the lean power module weighing only 2.6 pounds at 8 x 8 x 1.6 inches.

VERSATILE POWER – COMBAT READY

The uninterrupted power management and distribution system delivers power where and when you need it. SPACES converts solar and tactical power sources into usable power to support combat operations as well as 12/24 VDC commercial accessories, while being compatible with mixed battery chemistries and mixed state-of-charge with up to 600 W output.



The SPACES power module charging 24 V lead-acid battery array using power from 220W rigid solar panels and SPACES power module stacked with foldable solar panel.

PRODUCT SPECIFICATIONS

RADIO POWER ADAPTERS

	Merlin-Handheld	Merlin-Handheld CSEL	Merlin-Handheld TW-950	Merlin-2	Merlin-3	Merlin-3X	Merlin-Handheld Battery Eliminator
Input Power	110 W			250 W			—
Input Voltage	10–40 VDC @ 10 ADC (max)			10–42 VDC @ 14.5 ADC (max)			10–40 VDC @ 10 ADC (max)
Output Voltage	5 V (10 W max) or 12 V (15 W max)			12–32 VDC @ 4 ADC (100 W max)			—
Efficiency	94%			97%			96%
Weight	0.36 lbs (163 g)	0.43 lbs (195 g)	0.35 lbs (161 g)	2.26 lbs (1.03 kg)	1.8 lbs (829 g)	1.8 lbs (829 g)	0.31 lbs
Size	1.45" H x 3.75" W x 1.52" D	1.45" H x 3.75" W x 1.76" D	1.44" H x 2.70" W x 1.52" D	2.39" H x 11.17" W x 3.26" D	1.9" H x 7.6" W x 3.5" D	1.9" H x 7.6" W x 3.5" D	0.97" H x 2.70" W x 1.52" D
Applicable Standards	MIL-STD-810G, MIL-STD-461F, MIL-STD-1275D						MIL-STD-810G, MIL-STD-461F, MIL-STD-1275D
LI Ion Battery Charge Time	3 hours typical						—

TACTICAL POWER MANAGERS

	Merlin-2	Merlin-2 Multi-Output	Merlin-3	Vulture Power Scavenger
Input Power	300 W		250 W	135 W DC
Input Voltage	10–42 VDC @ 14.5 ADC (max)			11–42 VDC
Output Voltage	12–32 VDC @ 4 ADC (280 W max)		12–32 VDC @ 4 ADC (100 W max)	10–20 V
Efficiency	97%			91%
Weight	2.26 lbs (1.03 kg)	2.18 lbs (0.99 kg)	1.8 lbs (829 g)	0.5 lb (without cables)
Size	2.39" H x 11.17" W x 3.26" D	11.17" L x 1.89" W x 3.26" H	1.9" H x 7.6" W x 3.5" D	2.9" x 2.2" x 0.70" (without cables)
Applicable Standards	MIL-STD-810G, MIL-STD-461F			—
LI Ion Battery Charge Time	3 hours typical			3 hours
Scavenge Connector				SAE 2-pin connector (from 28007RC SAE 2-pin cable, 16AWG)
Output Connector				Glenair 807-348-01ZNU6-6SY
Battery Connector				Glenair 807-309-06ZNU6-6PY
Housing Material				Aluminum