

**CHAPTER 2**

**ALTERNATIVE POWER SOURCES FOR  
COMMUNICATIONS EQUIPMENT  
(APSCE)**

**EQUIPMENT DESCRIPTION SHEETS**

THIS PAGE INTENTIONALLY LEFT BLANK

## RUGGEDIZED, POWER SUPPLY (RPS)



**TAMCN: A7705**

**ID: 10477B**

**NSN: 6130-01-475-4999**

### Functional Description

The Ruggedized Power Supply (RPS), PP-8474/G (18-30VDC), model 715875-1, is a general purpose power supply intended to support tactical equipment in the field or in a maintenance facility. The RPS is a modified MIL-T-28800 Type II, Class 2, Coverless Style A unit that converts 115VAC, 50/60Hz input power into regulated adjustable DC voltage. Model 713860-1 (ID 10477A/NSN 6130-01-452-8403) is capable of providing regulated DC voltage adjustable from 24-28 VDC and from 0-60 Amps and was fielded in limited quantities. Both versions are interchangeable in supporting electronics equipment, except DSESTS (TAMCN E1907G) which can only be supported by the 18-30 VDC version of the PP-8474/G.

### Technical Description

#### Power Supply

Manufacturer: GE Aviation  
 Model: 715875-1  
 713860-1

#### Power

Input: 103.5 - 126.5VAC

#### Output:

Model 715875-1 18-30VDC @ 260 Amp  
 Model 713860-1 24-28VDC @ 60 Amp

Frequency (Hz): 47-63

#### Dimensions

Length (in): 17  
 Width (in): 8  
 Height (in): 13.3  
 Weight (lb): 44  
 Volume (ft<sup>3</sup>): 1

#### Temperatures

Operating: -40°F to +131°F  
 Storage: -59.8°F to +159.8°F

#### Specifications

Input Connector: Cannon MS3102R22-2P  
 Output Connector: Cannon MS3102R22-2S  
 Power Cord: 6 to 9 ft with a 20A plug  
 MTBF: 54,000 hrs

**NOTES:** The PP-8474/G Power Supply (models 715875-1 and 713860-1) was fielded with a 20-ampere connector on the input power cord. TI-10477-15/1 describes optional conditions for operating the PP-8474/G that includes using a 15-ampere adapter for facilities without 20-ampere circuits and receptacles.

## BENCH TOP POWER SUPPLY (40VDC)



**TAMCN: A7706**

**ID: 10244B**

**NSN: 6130-01-531-9927**

### Functional Description

The PP-8436/P (XHR-40-25CE) bench top power supply provides 1000 watts of DC power from worldwide power. It has front panel binding post connectors, rear panel bus bar outputs, and a low current requirement that allows it to be plugged into a standard 120VAC, 15A circuits.

### Technical Description

#### Power Supply

Manufacturer: Xantrex  
 Model: XHR-40-25CE

#### Power

Input: 85-250 VAC

Output: 0-40 VDC @ 0-25 Amp

Frequency (Hz): 47-63

#### Dimensions

Length (in): 18.6  
 Width (in): 8.5  
 Height (in): 3.4  
 Weight (lb): 14  
 Volume (ft<sup>3</sup>): 0.4

#### Specifications

Input Harmonic Distortion: Harmonics distortion complies with EN61000-3-2 limits.  
 Time Delay: 4 sec maximum from power on until output stable.

**NOTES:** These power supplies (XHR-40-25CE) will be fielded to fill unit backorders or new requirements for power supply PP-8436/P, NSN 6130-21-911-6149. The PP-8436/P will operate from worldwide power. However, it is only fielded with a 120VAC input power cable.

**BENCH TOP POWER SUPPLY (40VDC)**



**TAMCN: A7706**

**ID: 10244A**

**NSN: 6130-21-911-6149**

**Functional Description**

The PP-8436/P (XHR-40-25M) bench top power supply provides up to 40V and 25A of variable DC output for bench and automated test equipment (ATE) applications. Automatic mode crossover into voltage mode and current mode allows the use of line voltages around the world without resetting switches, or adding on options. The front panel has Light Emitting Diode (LED) indicators for voltage, current, over voltage protection (OVP) and shutdown.

**Technical Description**

**Power Supply**

Manufacturer: Xantrex  
 Model: XHR-40-25M

**Power**

Input: 85-250 VAC  
 Output: 0-40 VDC @ 0-25 Amp

**Dimensions**

Length (in): 18.6  
 Width (in): 8.5  
 Height (in): 3.8  
 Weight (lb): 18  
 Volume (ft<sup>3</sup>): 0.4

**Temperatures**

Operating: +32°F to +122°F  
 Storage: -40°F to +185°F

**NOTES:** This power supply is no longer being fielded. Backorders are being filled by NSN 6130-01-531-9927.

<b>BENCH TOP POWER SUPPLY (40VDC)</b>																									
	<b>TAMCN: A7706</b>																								
	<b>ID: 10244C</b>																								
	<b>NSN: 6130-01-593-9105</b>																								
<b>Functional Description</b>																									
<p>The PP-8436/P (XHR40-25M106) bench top power supply provides 1000 watts of DC power from worldwide power. It has front panel binding post connectors, rear panel bus bar outputs, locking voltage and current knobs, and a low current requirement that allows it to be plugged into a standard 120VAC, 15A circuits. State-of-the-art zero voltage or "soft" switching technology virtually eliminates switching transients for high efficiency, low noise, and high reliability.</p>																									
<b>Technical Description</b>																									
<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b><u>Power Supply</u></b></td> <td style="width: 50%;"><b><u>Dimensions</u></b></td> </tr> <tr> <td>Manufacturer: Ametek</td> <td>Length (in): 18.8</td> </tr> <tr> <td>Model: XHR40-25M106</td> <td>Width (in): 8.5</td> </tr> <tr> <td></td> <td>Height (in): 3.4</td> </tr> <tr> <td><b><u>Power</u></b></td> <td>Weight (lb): 14</td> </tr> <tr> <td>Input: 85-250 VAC</td> <td>Volume (ft<sup>3</sup>): 0.3</td> </tr> <tr> <td>Output: 0-40 VDC @ 0-25 Amp</td> <td></td> </tr> <tr> <td>Frequency (Hz): 47-63</td> <td></td> </tr> <tr> <td colspan="2"><b><u>Specifications</u></b></td> </tr> <tr> <td colspan="2">Front panel voltage and current knobs are locking.</td> </tr> <tr> <td colspan="2">Over Temperature Protection Shutdown, Over Voltage Protection Set, Local Voltage and Current Limit Setting</td> </tr> <tr> <td colspan="2">Time Delay: 4 sec maximum from power on until output stable.</td> </tr> </table>		<b><u>Power Supply</u></b>	<b><u>Dimensions</u></b>	Manufacturer: Ametek	Length (in): 18.8	Model: XHR40-25M106	Width (in): 8.5		Height (in): 3.4	<b><u>Power</u></b>	Weight (lb): 14	Input: 85-250 VAC	Volume (ft <sup>3</sup> ): 0.3	Output: 0-40 VDC @ 0-25 Amp		Frequency (Hz): 47-63		<b><u>Specifications</u></b>		Front panel voltage and current knobs are locking.		Over Temperature Protection Shutdown, Over Voltage Protection Set, Local Voltage and Current Limit Setting		Time Delay: 4 sec maximum from power on until output stable.	
<b><u>Power Supply</u></b>	<b><u>Dimensions</u></b>																								
Manufacturer: Ametek	Length (in): 18.8																								
Model: XHR40-25M106	Width (in): 8.5																								
	Height (in): 3.4																								
<b><u>Power</u></b>	Weight (lb): 14																								
Input: 85-250 VAC	Volume (ft <sup>3</sup> ): 0.3																								
Output: 0-40 VDC @ 0-25 Amp																									
Frequency (Hz): 47-63																									
<b><u>Specifications</u></b>																									
Front panel voltage and current knobs are locking.																									
Over Temperature Protection Shutdown, Over Voltage Protection Set, Local Voltage and Current Limit Setting																									
Time Delay: 4 sec maximum from power on until output stable.																									
<p><b>NOTES:</b> These power supplies (XHR40-25M106) will be fielded to fill unit backorders or new requirements for power supply PP-8436/P, NSN 6130-21-911-6149 and NSN 6130-01-531-9927</p>																									

**POWER INVERTERSYSTEM, DC TO AC, (QP-1800)**



**TAMCN: H0004**

**ID: 11460A**

**NSN: 6130-01-552-6350**

**Functional Description**

The Quiet Power DC to AC Inverter System (QP-1800) is comprised of one QP-1800 Inverter, one NATO Slave Input Cable, and one Transport Case. This semi-ruggedized system converts 24VDC to 115VAC (prue sine wave) enabling operation of 115VAC powered devices from vehicle 24VDC power.

**Technical Description**

**Inverter**

Manufacturer: Iris Technology  
 Model: 287A120

**Dimensions**

Length (in): 22.1  
 Width (in): 17.9  
 Height (in): 10.4  
 Weight (lb): 20.0  
 Volume (ft<sup>3</sup>): 2.3

**Power**

Input: 20-32 VDC

Output:

Continuous Power: 1800W  
 Surge Power: 2900W

**Temperatures**

Operating: -4°F to +140°F  
 Storage: -22°F to +158°F

**Warranty**

2 Year

**Specifications**

Dual 15 AMP AC receptacles with GFCI.  
 Each receptacle provides 115VAC (Prue Sine Wave) 60Hz.

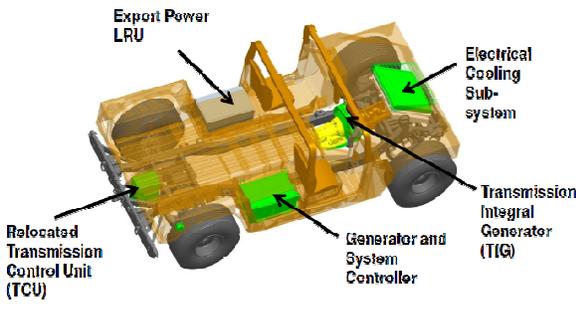
**NOTES:** MI 11460A-OI/1 provides instructions for mounting the QP-1800 in the HMMWVA2 M1123 Troop/Cargo Variant, Heavy HMMWV M1097A2, HMMWV M1152 Expanded Capability vehicle (ECV) and the HMMWV M1165 ECV.

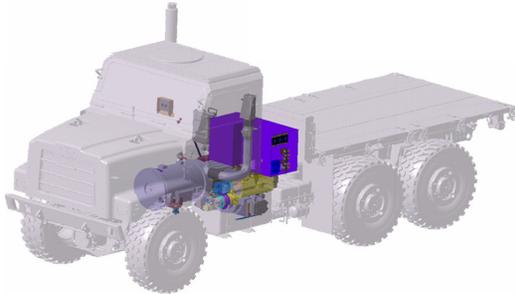
<b>VEHICLE MOUNTING KIT, QP-1800</b>	
	<b>TAMCN: N/A</b>
	<b>ID: N/A</b>
	<b>NSN: 5340-01-562-3360</b>
<b>Functional Description</b>	
<p>The Vehicle Mounting Kit is comprised of one Mounting Plate and the mounting kit. The Mounting Plate has a mounting pad and Velcro retaining straps to secure ancillary items to the bracket. The Mounting Kit is used for installation of the Quiet Power (QP-1800) DC to AC Power Inverter System on select USMC tactical vehicles.</p>	
<b>Technical Description</b>	
<p><b><u>Battery Charger</u></b>                      Manufacturer: Graywacke Engineering                      Model: BKT-2500INV</p>	<p><b><u>Dimensions</u></b>                      Length (in): 36.7                      Width (in): 14.5                      Height (in): 2.7                      Weight (lb): 11.5                      Volume (ft<sup>3</sup>): .83</p>
<p><b><u>Warranty</u></b>                      1 year parts and labor</p>	
<p><b>NOTES:</b> The Vehicle Mounting Plate is REQUIRED when the wheel well that the QP-1800 is being mounted to contains A/C components like the M1152A1 and M1165 ECV variants.</p>	

EXTRACT FROM TM 12359A –OD/C DATED 2011

<b>OUTBACK INVERTER</b>	
	<p><b>TAMCN: H0012</b></p>
	<p><b>ID: N/A</b></p>
	<p><b>NSN: 6130-01-580-7034</b></p>
<b>Functional Description</b>	
<p>The OutBack inverter/charger is an all in one mobile power solution. The OutBack inverter/charger incorporates a true sinewave inverter, intelligent battery charger and an AC transfer switch which includes a 30 amp pass through and automatic neutral / ground switching. The integrated smart battery charger uses multiple stages to perform quick recharging while prolonging battery life.</p>	
<b>Technical Description</b>	
<p><b><u>Battery Charger</u></b>                      Manufacturer: OutBack Power System                      Model: FX2524MT</p>	<p><b><u>Dimensions</u></b>                      Length (in): 16.25                      Width (in): 8.25                      Height (in): 13.0                      Weight (lb): 56.0                      Volume (ft<sup>3</sup>): 1.0</p>
<p><b><u>Power</u></b>                      VAC Input: 80-150                      VAC Output: 120                        VDC Input: 1.0 to 34.0                      VDC Output: 24                        Frequency (Hz): 54- 66</p>	
<p><b><u>Warranty</u></b> 2 Years</p>	
<p><b>NOTES:</b> The HUB communication manager allows the MATE to control and monitor a maximum of (10) ten OutBack Inverters. Currently the HUB comes in two types (the HUB-4 and the HUB-10). The HUB-4 can connect up to four Inverters and the HUB-10 can connect up to ten Inverters.</p>	

<b>RADIO POWER ADAPTER (117G RPA)</b>			
	<b>TAMCN: H0016</b>		
	<b>ID: TBD</b>		
	<b>NSN: TBD</b>		
<b>Functional Description</b>			
<p>The 117G RPA also called the Merlin-3 provides input power to the AN/PRC-117G radio and has an auxiliary output to power auxiliary equipment. The Merlin-3 has a DC input connector, DC output connector, radio connector and battery connector. The Merlin-3 comes with a 120W AC/DC input converter, DC input cable from a solar panel, a DC input cable from a SPACES output connector, transportation case, Operation Manual, and Quick Card. All other cables are ordered separately. The Merlin-3 operates from DC power (AC using converter). For a low voltage input the Merlin-3 will cutoff power to the auxiliary output to ensure enough power to the radio. The Merlin-3 will charge a BB-2590 or BB-390 battery when all available power is not being used by the radio or auxiliary output.</p>			
<b>Technical Description</b>			
<b>117G RPA</b>		<b>Dimensions</b>	
Manufacturer:	Iris Technology	Length (in):	13.5
Model:	Merlin-3	Width (in):	12.0
		Height (in):	6.0
<b>Power</b>		Weight (lb):	8.8
Input:	9-36 VDC	Volume (ft <sup>3</sup> ):	0.56
Output:	Radio, 26.5 VDC Auxiliary, 12-32 VDC	<b>Warranty</b>	2 years from date of purchase
Frequency (Hz):	xxx		
<b>Cable Input</b>	<b>Connects from:</b>	<b>Cable Output</b>	<b>Connects to:</b>
78535-102017	Auto accessory connector	78535-102023	Zinc Air Battery Radio Power Adapters
78535-102018	NATO equipped vehicle	78535-102024	10 ft extension cable
78535-102019	Solar panel	78535-102025	Auto Accessory 12 VDC
78535-102020	10 ft extension cable	78535-102026	Panasonic Toughbook
78535-102021	Zinc-Air Battery	78535-102027	Vehicle battery - clamps
78535-102022	Vehicle battery-clamps	78535-102028	Speakers - with custom connector
		78535-102041	GD8000 Laptop
Climatic Conditions: Operating -40°F to 131°F. Storage Temperature Range: -59°F to + 160°F.			

<b>ON BOARD VEHICLE POWER- HMMWV</b>	
	<p><b>TAMCN: N/A</b></p> <hr/> <p><b>ID: N/A</b></p> <hr/> <p><b>NSN: TBD</b></p>
<b>Functional Description</b>	
<p>The OBVP (ON BOARD VEHICLE POWER) includes a Permanent Magnet Generator installed between the engine and transmission, and two power control boxes. This (currently designed for the M1152A1) enables the vehicle to export 10kW of 120/208 3 phase power at the engine idle and on the move, and 30kW in stationary export mode. No modifications are made to the existing engine or vehicle alternator. The system is compatible with the MEPDIS-R family of Power Distribution Boxes.</p>	
<b>Technical Description</b>	
<p><b><u>Unit</u></b>                      Manufacturer: DRS                      Model: N/A</p>	<p><b><u>Fuel</u></b>                      Fuel Capacity: N/A                      Fuel Consumption(GPH): 3.45                      Fuel Requirement: Diesel/JP-8</p>
<p><b><u>Generator</u></b>                      Voltage (Volts): 120 / 208                      Frequency (Hz): 60                      Phase: 3                      Wires: 5-Wire                      Max Export Power: 30kW                      Power On-the-Move: 10kW</p>	<p><b><u>Dimensions</u></b>                      Length (in): N/A                      Width (in): N/A                      Height (in): N/A                      Weight (lbs): 556                      Volume (ft<sup>3</sup>): N/A</p>
<p><b><u>Alternate Models</u></b>      No USMC alternate models.</p>	
<p><b><u>Replaced Items</u></b>      No USMC items replaced.</p>	
<p><b><u>Transportability</u></b>      Installed onto host vehicle.</p>	
<p><b>NOTES:</b> The system as installed does not increase the footprint of the vehicle, nor does the system impinge on the cargo bed.</p>	

<b>ON-BOARD VEHICLE POWER- MTRV</b>																																													
	<b>TAMCN: N/A</b>																																												
	<b>ID: N/A</b>																																												
	<b>NSN: N/A</b>																																												
<b>Functional Description</b>																																													
<p>An installable kit for the MTRV, the OBVP-Large kit converts a standard MTRV into an electric drive vehicle capable of exporting up to 21kW of 120VAC power on the move, or 120kW of 120VAC stationary power. The cargo bed of the vehicle is left entirely intact and free for use. The system is compatible with current MEPDIS-R boxes.</p>																																													
<b>Technical Description</b>																																													
<table border="0" style="width: 100%;"> <tr> <td colspan="2"><b><u>Unit</u></b></td> <td colspan="2"><b><u>Fuel</u></b></td> </tr> <tr> <td>Manufacturer:</td> <td>Oshkosh Corp.</td> <td>Fuel Capacity:</td> <td>N/A</td> </tr> <tr> <td>Model:</td> <td>N/A</td> <td>Fuel Consumption (GPH):</td> <td>9.55</td> </tr> <tr> <td></td> <td></td> <td>Fuel Requirement:</td> <td>Diesel/JP-8</td> </tr> <tr> <td colspan="2"><b><u>Generator</u></b></td> <td colspan="2"><b><u>Dimensions</u></b></td> </tr> <tr> <td>Voltage (Volts):</td> <td>208</td> <td>Length (in):</td> <td>N/A</td> </tr> <tr> <td>Frequency (Hz):</td> <td>60</td> <td>Width (in):</td> <td>N/A</td> </tr> <tr> <td>Phase:</td> <td>3</td> <td>Height (in):</td> <td>N/A</td> </tr> <tr> <td>Wires:</td> <td>5-Wire</td> <td>Weight (lbs):</td> <td>2180</td> </tr> <tr> <td>Max Export Power:</td> <td>120kW</td> <td>Volume (ft<sup>3</sup>):</td> <td>N/A</td> </tr> <tr> <td>Power On-the-Move:</td> <td>21kW</td> <td></td> <td></td> </tr> </table>		<b><u>Unit</u></b>		<b><u>Fuel</u></b>		Manufacturer:	Oshkosh Corp.	Fuel Capacity:	N/A	Model:	N/A	Fuel Consumption (GPH):	9.55			Fuel Requirement:	Diesel/JP-8	<b><u>Generator</u></b>		<b><u>Dimensions</u></b>		Voltage (Volts):	208	Length (in):	N/A	Frequency (Hz):	60	Width (in):	N/A	Phase:	3	Height (in):	N/A	Wires:	5-Wire	Weight (lbs):	2180	Max Export Power:	120kW	Volume (ft <sup>3</sup> ):	N/A	Power On-the-Move:	21kW		
<b><u>Unit</u></b>		<b><u>Fuel</u></b>																																											
Manufacturer:	Oshkosh Corp.	Fuel Capacity:	N/A																																										
Model:	N/A	Fuel Consumption (GPH):	9.55																																										
		Fuel Requirement:	Diesel/JP-8																																										
<b><u>Generator</u></b>		<b><u>Dimensions</u></b>																																											
Voltage (Volts):	208	Length (in):	N/A																																										
Frequency (Hz):	60	Width (in):	N/A																																										
Phase:	3	Height (in):	N/A																																										
Wires:	5-Wire	Weight (lbs):	2180																																										
Max Export Power:	120kW	Volume (ft <sup>3</sup> ):	N/A																																										
Power On-the-Move:	21kW																																												
<b><u>Alternate Models</u></b>	No USMC alternate models.																																												
<b><u>Replaced Items</u></b>	No USMC items replaced.																																												
<b><u>Transportability</u></b>	Installed onto host vehicle.																																												
<p><b>NOTES:</b> The system as installed does not increase the footprint of the vehicle, nor does the system impinge on the cargo bed.</p>																																													

<b>HAND HELD RADIO POWER ADAPTER AN/PRC-148</b>			
	<b>TAMCN: N/A</b>		
	<b>ID: N/A</b>		
	<b>NSN: 5940-01-578-7523</b>		
<b>Functional Description</b>			
<p>The Hand Held Radio Power Adapter will allow the AN/PRC-148 radio to be powered from any of the BA/BB-XX90 type batteries.</p>			
<b>Technical Description</b>			
<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p><b><u>Power Supply</u></b></p> <p>Manufacturer: Thales                      Model: P/N 4101441-502</p> <p><b><u>Power</u></b></p> <p>Input: 12 VDC</p> <p>Frequency (Hz): 30 to 512 MHz</p> <p><b><u>Warranty</u></b> 2 Years</p> <p><b><u>Environmental</u></b></p> <p>Humidity: 90- 95%                      Altitude: 30,000 ft</p> </td> <td style="width: 50%; vertical-align: top;"> <p><b><u>Dimensions</u></b></p> <p>Depth (in): 1.51                      Width (in): 2.63                      Height (in): 1.57                      Weight (lb): 0.3</p> <p><b><u>Temperatures</u></b></p> <p>Operating: -30 °C to +60 °C                      -22 °F to +140 °F                      Storage: -50 °C to +71 °C                      -59 °F to +160 °F</p> </td> </tr> </table>		<p><b><u>Power Supply</u></b></p> <p>Manufacturer: Thales                      Model: P/N 4101441-502</p> <p><b><u>Power</u></b></p> <p>Input: 12 VDC</p> <p>Frequency (Hz): 30 to 512 MHz</p> <p><b><u>Warranty</u></b> 2 Years</p> <p><b><u>Environmental</u></b></p> <p>Humidity: 90- 95%                      Altitude: 30,000 ft</p>	<p><b><u>Dimensions</u></b></p> <p>Depth (in): 1.51                      Width (in): 2.63                      Height (in): 1.57                      Weight (lb): 0.3</p> <p><b><u>Temperatures</u></b></p> <p>Operating: -30 °C to +60 °C                      -22 °F to +140 °F                      Storage: -50 °C to +71 °C                      -59 °F to +160 °F</p>
<p><b><u>Power Supply</u></b></p> <p>Manufacturer: Thales                      Model: P/N 4101441-502</p> <p><b><u>Power</u></b></p> <p>Input: 12 VDC</p> <p>Frequency (Hz): 30 to 512 MHz</p> <p><b><u>Warranty</u></b> 2 Years</p> <p><b><u>Environmental</u></b></p> <p>Humidity: 90- 95%                      Altitude: 30,000 ft</p>	<p><b><u>Dimensions</u></b></p> <p>Depth (in): 1.51                      Width (in): 2.63                      Height (in): 1.57                      Weight (lb): 0.3</p> <p><b><u>Temperatures</u></b></p> <p>Operating: -30 °C to +60 °C                      -22 °F to +140 °F                      Storage: -50 °C to +71 °C                      -59 °F to +160 °F</p>		

<b>HAND HELD RADIO POWER ADAPTER AN/PRC-152</b>																																																					
	<b>TAMCN: N/A</b>																																																				
	<b>ID: N/A</b>																																																				
	<b>NSN: N/A</b>																																																				
<b>Functional Description</b>																																																					
<p>The Hand Held Radio Power Adapter will allow the AN/PRC-152 radio to be powered from any of the BA/BB-XX90 type batteries.</p>																																																					
<b>Technical Description</b>																																																					
<table border="0" style="width: 100%;"> <tr> <td colspan="2"><b><u>Power Supply</u></b></td> <td colspan="2"><b><u>Dimensions</u></b></td> </tr> <tr> <td>Manufacturer:</td> <td>EFB Corporation</td> <td>Length (in):</td> <td>3.4</td> </tr> <tr> <td>Model:</td> <td>P/N 1-10080-00</td> <td>Width (in):</td> <td>2.6</td> </tr> <tr> <td></td> <td></td> <td>Height (in):</td> <td>1.5</td> </tr> <tr> <td></td> <td></td> <td>Weight (lb):</td> <td>0.85</td> </tr> <tr> <td colspan="2"><b><u>Power</u></b></td> <td colspan="2"><b><u>Temperatures</u></b></td> </tr> <tr> <td>Input:</td> <td>12 VDC Nominal</td> <td>Operating:</td> <td>-20 °C to +60 °C</td> </tr> <tr> <td>Output:</td> <td>12.6 VDC max</td> <td></td> <td>-4 °F to +140 °F</td> </tr> <tr> <td colspan="2"><b><u>Warranty</u></b></td> <td>Storage temperature:</td> <td>xxx</td> </tr> <tr> <td colspan="2"></td> <td></td> <td>xxx</td> </tr> <tr> <td colspan="2"><b><u>Environmental</u></b></td> <td colspan="2"></td> </tr> <tr> <td>Humidity:</td> <td>95%</td> <td colspan="2"></td> </tr> <tr> <td>Altitude:</td> <td>50,000 ft</td> <td colspan="2"></td> </tr> </table>		<b><u>Power Supply</u></b>		<b><u>Dimensions</u></b>		Manufacturer:	EFB Corporation	Length (in):	3.4	Model:	P/N 1-10080-00	Width (in):	2.6			Height (in):	1.5			Weight (lb):	0.85	<b><u>Power</u></b>		<b><u>Temperatures</u></b>		Input:	12 VDC Nominal	Operating:	-20 °C to +60 °C	Output:	12.6 VDC max		-4 °F to +140 °F	<b><u>Warranty</u></b>		Storage temperature:	xxx				xxx	<b><u>Environmental</u></b>				Humidity:	95%			Altitude:	50,000 ft		
<b><u>Power Supply</u></b>		<b><u>Dimensions</u></b>																																																			
Manufacturer:	EFB Corporation	Length (in):	3.4																																																		
Model:	P/N 1-10080-00	Width (in):	2.6																																																		
		Height (in):	1.5																																																		
		Weight (lb):	0.85																																																		
<b><u>Power</u></b>		<b><u>Temperatures</u></b>																																																			
Input:	12 VDC Nominal	Operating:	-20 °C to +60 °C																																																		
Output:	12.6 VDC max		-4 °F to +140 °F																																																		
<b><u>Warranty</u></b>		Storage temperature:	xxx																																																		
			xxx																																																		
<b><u>Environmental</u></b>																																																					
Humidity:	95%																																																				
Altitude:	50,000 ft																																																				

<b>HAND HELD RADIO POWER ADAPTER AN/PRC-153</b>			
	<b>TAMCN: N/A</b>		
	<b>ID: N/A</b>		
	<b>NSN: N/A</b>		
<b>Functional Description</b>			
<p>The Hand Held Radio Power Adapter will allow the AN/PRC-152 radio to be powered from any of the BA/BB-XX90 type batteries.</p>			
<b>Technical Description</b>			
<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p><b><u>Power Supply</u></b>                      Manufacturer: DCX-CHOL                      Model: 4000-4004-366</p> <p><b><u>Power</u></b>                      Input:: 12 VDC</p> <p><b><u>Warranty</u></b>                      1 Year</p> <p><b><u>Environmental</u></b>                      Humidity: 90- 95%                      Altitude: 30,000 ft</p> </td> <td style="width: 50%; vertical-align: top;"> <p><b><u>Dimensions</u></b>                      Depth (in): 3.5                      Width (in): 6                      Height (in): 5.75                      Weight (lb): 0.69</p> <p><b><u>Temperatures</u></b>                      Operating: -28°C to +54°C                      -20°F to +130°F                      Storage: -50°C to +71°C                      -59°F to +160°F</p> </td> </tr> </table>		<p><b><u>Power Supply</u></b>                      Manufacturer: DCX-CHOL                      Model: 4000-4004-366</p> <p><b><u>Power</u></b>                      Input:: 12 VDC</p> <p><b><u>Warranty</u></b>                      1 Year</p> <p><b><u>Environmental</u></b>                      Humidity: 90- 95%                      Altitude: 30,000 ft</p>	<p><b><u>Dimensions</u></b>                      Depth (in): 3.5                      Width (in): 6                      Height (in): 5.75                      Weight (lb): 0.69</p> <p><b><u>Temperatures</u></b>                      Operating: -28°C to +54°C                      -20°F to +130°F                      Storage: -50°C to +71°C                      -59°F to +160°F</p>
<p><b><u>Power Supply</u></b>                      Manufacturer: DCX-CHOL                      Model: 4000-4004-366</p> <p><b><u>Power</u></b>                      Input:: 12 VDC</p> <p><b><u>Warranty</u></b>                      1 Year</p> <p><b><u>Environmental</u></b>                      Humidity: 90- 95%                      Altitude: 30,000 ft</p>	<p><b><u>Dimensions</u></b>                      Depth (in): 3.5                      Width (in): 6                      Height (in): 5.75                      Weight (lb): 0.69</p> <p><b><u>Temperatures</u></b>                      Operating: -28°C to +54°C                      -20°F to +130°F                      Storage: -50°C to +71°C                      -59°F to +160°F</p>		
<p><b>NOTES:</b> The PRC-153 Radio Power Adapter is compatible with the following batteries: BA-5590, BA-5390, BB-2590, BB-390.</p>			

<b>POWER ADAPTER, MULTI-RADIO (MRPA)</b>																																																									
	<b>TAMCN: H7705</b>																																																								
	<b>ID: 10911A</b>																																																								
	<b>NSN: 6130-01-473-0349</b>																																																								
<b>Functional Description</b>																																																									
<p>The Multi Radio Power Adapter (MRPA) also known as the Advanced SINCGARS Alternative Power Supply Suitcase (ASAPS-SC), is designed to power six 12V radios using 110VAC and/or 12VDC (supplied by a vehicle battery). While fully capable of operating from either a 110VAC or 12VDC power source, the MRPA is more effective when both are used together because the vehicle battery acts as an uninterruptible power supply (UPS) for your radios. The AC power source not only provides power to operate the SINCGARS radios but also charges the vehicle battery. The portable suitcase-sized MRPA comes with six 12-foot power cords that allow up to six radios to be spread out up to 12 feet away.</p>																																																									
<b>Technical Description</b>																																																									
<table border="0" style="width: 100%;"> <tr> <td style="width: 33%;"><b><u>Adapter Set</u></b></td> <td style="width: 33%;"></td> <td style="width: 33%;"><b><u>Dimensions</u></b></td> <td style="width: 33%;"></td> </tr> <tr> <td>Manufacturer:</td> <td>PulseTech</td> <td>Length (in):</td> <td>16.25</td> </tr> <tr> <td>Model:</td> <td>ASAPS-SC</td> <td>Width (in):</td> <td>19.75</td> </tr> <tr> <td></td> <td></td> <td>Height (in):</td> <td>11</td> </tr> <tr> <td></td> <td></td> <td>Weight (lb):</td> <td>33</td> </tr> <tr> <td></td> <td></td> <td>Volume (ft<sup>3</sup>):</td> <td>2</td> </tr> <tr> <td><b><u>Power</u></b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Input:</td> <td>12 VDC 110 VAC</td> <td></td> <td></td> </tr> <tr> <td>Output:</td> <td>13.5 VDC</td> <td></td> <td></td> </tr> <tr> <td>Frequency (Hz):</td> <td>40-70</td> <td></td> <td></td> </tr> <tr> <td><b><u>Warranty</u></b></td> <td>1 Year</td> <td></td> <td></td> </tr> <tr> <td><b><u>Specifications</u></b></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4">Handles Input AC Power input from 92-135VAC.</td> </tr> <tr> <td colspan="4">Output Amperage: Demand Based, Up To 5 Amps Per Channel.</td> </tr> </table>		<b><u>Adapter Set</u></b>		<b><u>Dimensions</u></b>		Manufacturer:	PulseTech	Length (in):	16.25	Model:	ASAPS-SC	Width (in):	19.75			Height (in):	11			Weight (lb):	33			Volume (ft <sup>3</sup> ):	2	<b><u>Power</u></b>				Input:	12 VDC 110 VAC			Output:	13.5 VDC			Frequency (Hz):	40-70			<b><u>Warranty</u></b>	1 Year			<b><u>Specifications</u></b>				Handles Input AC Power input from 92-135VAC.				Output Amperage: Demand Based, Up To 5 Amps Per Channel.			
<b><u>Adapter Set</u></b>		<b><u>Dimensions</u></b>																																																							
Manufacturer:	PulseTech	Length (in):	16.25																																																						
Model:	ASAPS-SC	Width (in):	19.75																																																						
		Height (in):	11																																																						
		Weight (lb):	33																																																						
		Volume (ft <sup>3</sup> ):	2																																																						
<b><u>Power</u></b>																																																									
Input:	12 VDC 110 VAC																																																								
Output:	13.5 VDC																																																								
Frequency (Hz):	40-70																																																								
<b><u>Warranty</u></b>	1 Year																																																								
<b><u>Specifications</u></b>																																																									
Handles Input AC Power input from 92-135VAC.																																																									
Output Amperage: Demand Based, Up To 5 Amps Per Channel.																																																									
<p><b>NOTES:</b> The MRPA is being replaced by the 24 Volt Multi-Radio Power Adapter Tower. NSN: 5935-01-578-7684.</p>																																																									

**POWER ADAPTER, SINGLE SINGGARS (SSPA)**



**TAMCN: H7710**

**ID: 10912A**

**NSN: 5895-01-465-2867**

**Functional Description**

The Single SINGGARS Power Adapter (SSPA) is designed to power a Single Channel Ground and Airborne Radio Systems (SINGGARS) radio. The SSPA also referred to as the PAC-216/U, replaces the radio CY-8523A battery box and converts AC voltage into DC voltage required to operate the radio. The SSPA includes a built-in uninterruptible power supply (UPS) to operate during AC power outages. The SSPA will not operate off DC input voltage.

**Technical Description**

**Power Adapter**

Manufacturer: Iris Technology  
 Model: PAC-216/U

**Power**

Input: 85-264 VAC

Output: 12 VDC

Frequency (Hz): 47-440

**Warranty** 2 Years

Contains lead-acid UPS battery.

**Dimensions**

Length (in): 8.9  
 Width (in): 3.7  
 Height (in): 4.5  
 Weight (lb): 4.7  
 Volume (ft<sup>3</sup>): 0.1

**Temperatures**

Operating: -14°F to +140°F  
 Storage: -40°F to +185°F

**NOTES:** The SSPA is not a USMC repairable item. Post-warranty repairs are performed by the manufacturer (Iris Technology) and are locally funded. When uneconomical to repair, units can replace the SSPA using unit funds or request repair from Iris Technology.

<b>POWER ADAPTER, MULTI-SINGGARS (MSPA)</b>	
	<b>TAMCN: H7715</b>
	<b>ID: 10908A</b>
	<b>NSN: 6130-01-458-4041</b>
<b>Functional Description</b>	
<p>The Multi SINGGARS Power Adapter (MSPA) also known as the Advanced SINGGARS Alternative Power Supply (ASAPS) is designed to power six SINGGARS radios using 110VAC and/or 12VDC (supplied by a vehicle battery). While fully capable of operating from either an 110VAC or 12VDC power source, the MSPA is more effective when both are used together because the vehicle battery acts as a UPS for your radios. The AC power source not only provides power to operate the SINGGARS radios but also charges the vehicle battery. The MSPA is designed to stand upright, but can be used lying on its side or back. The MSPA is fielded with a green transport case.</p>	
<b>Technical Description</b>	
<p><b><u>Power Adapter</u></b>                      Manufacturer: PulseTech                      Model: ASAPS-6</p>	<p><b><u>Dimensions</u></b>                      Length (in): 21                      Width (in): 19                      Height (in): 36                      Weight (lb): 110                      Volume (ft<sup>3</sup>): 8.4</p>
<p><b><u>Power</u></b>                      Input: 12 VDC/110 VAC</p> <p>Output: 13.5 VDC</p> <p>Frequency (Hz): 40-70</p>	
<p><b><u>Warranty</u></b>                      1 Year</p>	
<p><b><u>Specifications</u></b>                      Handles Input AC Power Fluctuations from 92-135 VAC.                      Output Amperage: Demand Based, Up To 5 Amps Per Channel.</p>	
<p><b>NOTES:</b> Not intended for power on the move applications. The MRPA is being replaced by the 24 Volt Multi-Radio Power Adapter Tower. NSN: 5935-01-578-7684. White case W/wheels 740X960 NSN 6160-01-461-6165. Green case W/wheels 740X961 NSN 6160-01-513-5432.</p>	

**POWER ADAPTER, SINGLE RADIO, 24V (MRC-93)**



**TAMCN: H7706**

**ID: 11119A**

**NSN: 6130-01-520-8178**

**Functional Description**

The Single Radio Power Adapter, 24V, also known as the MRC-93, is an alternative power source that connects directly to 24V radio transceivers in place of the battery box. The MRC-93 operates off of AC or DC voltages. Any BA-XX90 or BB-XX90 equivalent battery can be inserted into the MRC-93 providing a UPS capability. The MRC-93 will not charge batteries.

**Technical Description**

**Power Adapter**

Manufacturer: McDowell Research  
 Model: MRC-93

**Power**

Input: 11-36 VDC  
 95-270 VAC

Output: 24 VDC

Frequency (Hz): 47-440

**Warranty**

4 Years

**Dimensions**

Length (in): 9.1  
 Width (in): 2.9  
 Height (in): 6.4  
 Weight (lb): W/O Battery 4.8  
 Volume (ft<sup>3</sup>): 0.09

**Temperatures**

Operating: -58°F to +131°F  
 Storage: -58°F to +149°F

**Altitude**

Operating: 27,000 FT  
 Storage: 55,000 FT

**NOTES:** The MRC-93 connects directly to the following equipment in place of the battery box: AN/PRC-117F, AN/PRC-113, AN/PRC-138, AN/PRC-150, AN/PSC-5, AN/PSC-5D.

## 24 VOLT MULTI-RADIO POWER ADAPTER TOWER



**TAMCN: H7715**

**ID: 11802A**

**NSN: 5935-01-578-7684**

### Functional Description

The 24 Volt Multi Radio Power Adapter also known as the 24V tower is designed to power two or four 12-24v radios using 110 VAC and/or 12VDC (supplied in a vehicle battery). While fully capable of operating from either an 110VAC or 12VDC power source, the 24V tower is more effective when both are used together because the vehicle battery acts as a UPS for your radios. The 24V tower is designed to stand upright, but can be used lying on its side or back.

### Technical Description

**Power Supply**

Manufacturer: Graywacke  
 Model: GEI24-RPA-T

**Power**

Input: 24 VDC  
 Input Range: 18-36 VDC

**Warranty**

1 1/2 Years

**Dimensions**

Depth (in): 16  
 Length (in): 23.5  
 Width (in): 14  
 Weight (lb): 57.6  
 Volume (ft<sup>3</sup>): 3.04

**Temperatures**

Operating: 0°C to +40°C  
 32°F to +104°F  
 Storage: -20°C to +80°C  
 -4°F to +176°F

**NOTES:** Not intended for use in vehicles while on the move.

**SOLAR PORTABLE ALTERNATIVE COMMUNICATIONS ENERGY SYSTEM (SPACES)**



**TAMCN: H0011**

**ID: 11838A**

**NSN: 5895-01-581-9408**

**Functional Description**

The Solar Portable Alternative Communications Energy System (SPACES) is a folding, portable solar panel system that provides energy to recharge BB-2590 batteries and to power external devices. The Charge Controller unit provides and uses various cable configurations to accept energy from different renewable energy power sources (DC/AC, Vehicle, Solar and BA-5590 Battery Equivalents). The Charge Controller unit converts renewable energy sources into a power output capable of recharging two BB-2590 Li-Ion batteries in 5 to 6 hours.

**Technical Description**

**Spaces**

Manufacturer: Iris Technology  
 Model: Star Power

**Dimensions**

Length (in): 22.8  
 Width (in): 5  
 Height (in): 7.75  
 Weight (in): 27  
 Volume (ft<sup>3</sup>): 0.51

**Temperatures**

Operating: -4°F to +131°F  
 Storage: -59°F to +160°F

**Power Capabilities**

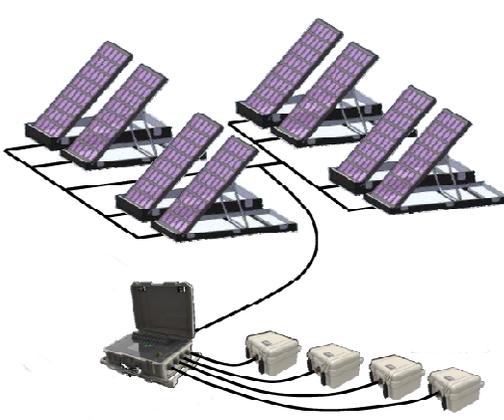
The SPACES Star Power module can accept a maximum of 320 watts from various DC input power sources ranging from 9 VDC to 33 VDC. The module only accepts DC power.

**Input**

Solar: Two (12 volts) solar panels.  
 Vehicle DC: 9 VDC to 35 VDC via NATO slave receptacle.  
 AC : 85 to 264 VAC, 50 to 440Hz converted to DC power via AC/DC converter.  
 Battery: 9 VDC to 35 VDC

**Output**

DC: 12 VDC to 32 VDC  
 AC: 115 VAC @ 120 watts, modified or pure sine wave using a Micro Inverter.

<b>GROUND RENEWABLE EXPEDITIONARY ENERGY NETWORK SYSTEM (GREENS)</b>			
	<b>TAMCN: A0375</b>		
	<b>I.D. N/A</b>		
	<b>NSN: N/A</b>		
<b>Functional Description</b>			
<p>The Ground Renewable Expeditionary Energy Network System (GREENS) is a man transportable device with renewable energy collection and storage capabilities that can energize Communicational / Electrical equipment, sensors and radios. The GREENS uses arrays of solar panels and rechargeable batteries to provide an average continuous output of 300 Watts. This fills the gap between what a large power generator and a battery provides. In addition to renewable energy the GREENS can also be hybridized with generators and vehicle power to provide a intelligent small scale energy management systems.</p>			
<b>Technical Description</b>			
<p><b><u>Greens</u></b>                      Manufacturer: UEC Electronics                      Model: N/A</p> <p><b><u>Temperatures</u></b>                      Operating:                      Storage:</p> <p><b><u>Power Capabilities</u></b></p> <p><b><u>Input</u></b>                      Solar: 1.6kW Solar Array                      Vehicle DC: 28                      AC : 120 @ 50/60Hz</p> <p><b><u>Output</u></b>                      DC: 22-30</p>	<p><b><u>Dimensions</u></b>                      Solar Panel w/case</p> <p>Electronic Module</p> <p>Battery Module</p> <p>Cabling</p>	<p>Length (in): 56                      Width (in): 38.5                      Height (in): 9.5                      Weight (in): 145                      Volume (ft<sup>3</sup>): 11.85</p> <p>Length (in): 23                      Width (in): 17                      Height (in): 8.5                      Weight (in): 60                      Volume (ft<sup>3</sup>): 1.92</p> <p>Length (in): 17.5                      Width (in): 16.5                      Height (in): 17.0                      Weight (in): 35                      Volume (ft<sup>3</sup>): 2.84</p> <p>Length (in):                      Width (in):                      Height (in):                      Weight (in): 50                      Volume (ft<sup>3</sup>):</p>	
<b>NOTES:</b>			

<b>400 AMP ALTERNATOR KIT- HMMWV</b>	
	<b>TAMCN: N/A</b>
	<b>I.D. N/A</b>
	<b>NSN: N/A</b>
<b>Functional Description</b>	
<p>The 400 Amp Alternator kit consists of a N1602-1 Alternator (NSN: 2920-01-466-1855) Mated with a N4033 Pulley (NSN: 3020-01-555-6394), modified mounting bracket, and A/C hoses. The kit enables the replacement of the 200 Amp alternator with this system, tripling the available power at engine idle. The voltage regulator is a dual voltage 28/14 VDC, allowing for 12-14 VDC applications. The system is intended for fielded HMMWV variants M1114, M1151, and M1165 with high demand electronics for communications and IED-Defeat applications.</p>	
<b>Technical Description</b>	
<p>System Voltage: 28 / 14 VDC</p> <p>Current:</p> <p style="padding-left: 20px;">Engine Idle: 185 Amps @ 28 VDC</p> <p style="padding-left: 20px;">Nominal: 410 Amps @ 28 VDC</p> <p>Replacement for N1228 Alternator.</p>	
<b>NOTES:</b> Installation kits to begun during the First Quarter – FY 2009.	

THIS PAGE INTENTIONALLY LEFT BLANK