

Where To Find Power Supplies For Military Applications

by David G. Morrison, Editor, How2Power.com

A number of companies offer power supplies for use in military and defense applications. Companies profiled here offer either military grade, COTS products or both, as off the shelf and/or custom power supplies. These include ac-dc power supplies, dc-dc converters, dc-ac inverters, battery chargers and EMI filters. Both domestic (within the U.S.) and overseas suppliers are included here.

In addition to providing an overview of the companies' product offerings, these descriptions offer information on the companies' design, test and manufacturing capabilities; their compliance with military standards and other certifications; and other relevant technical and business experience and qualifications.

This list will be updated and expanded periodically. If you have questions or comments on this list, please contact [me](#).

Companies listed in this section include:

- Abbott Technologies
- Advanced Conversion Technology
- Aegis Power Systems
- AJ's Power Source
- Astrodyne TDI
- BC Systems
- Behlman Electronics
- Bren-Tronics
- Espey Manufacturing & Electronics
- Gaia Converter
- Martek Power
- Modular Devices
- Milpower Source
- Pioneer Magnetics
- Polytron Devices
- Prime Power
- Rantec Power Systems
- Schaefer
- SynQor
- Vicor
- VPT
- XP Power

Abbott Technologies

(Sun Valley, CA)

Abbott Technologies (formerly Abbott Transistor Labs) provides state-of-the-art solutions for military power supplies and transformers for national defense and aerospace markets. Since 1961, Abbott Technologies has engineered military power supplies and transformers to play paramount roles in high profile missions, including the Apollo moon missions during their advent. From three-phase power supplies to custom transformers, Abbott Technologies designs and manufactures customized solutions to power individual projects and exceed expectations.

The company uses an expansive variety of daily testing protocols to ensure its military power supplies and transformers perform flawlessly without incident. Its engineers employ an agile quality control procedure that pairs dc power supply, ac-dc converter supplies, and dc-dc converter technologies to meet the most advanced defense and aerospace demands. Other products include PFC front ends, inductors, and EMI filters. For more information, see the [website](#).

Advanced Conversion Technology

(Middletown, Pennsylvania)

Advanced Conversion Technology (ACT), formed in 1981 and based in Middletown, PA, specializes in designing and manufacturing military ac-dc power supplies and military dc-dc power supplies to meet today's most demanding environmental, complex, performance, and miniaturization requirements. Over this time frame, ACT has developed and produced over 1,000 designs. ACT does this all in a vertically integrated 63,000-sq. ft facility. ACT has a versatile line of COTS ac-dc and dc-dc power supplies designed with your needs in mind.

ACT has developed a COTS ac-dc power supply to meet the requirements of a wide range military standards including MIL-STD-461 and MIL-STD-810. This military-grade COTS power supply is suitable for a variety of applications. The company offers these COTS power systems in a rugged natural convection package and could be customized to be rack-mounted or rugged frame-mounted. The input voltage is 85 to 264 Vac, single phase between 50 Hz and 400 Hz and a variety of single dc output voltages are available such as 12, 24, and 28 V. For maximum flexibility in your industrial or mil COTS applications, ACT offers designs including an active PFC front end. For more information, see the [website](#).

Aegis Power Systems

(Murphy, North Carolina)

Aegis Power Systems is a supplier of ac-dc and dc-dc power supplies for custom and special applications. Aegis has been designing and building highly reliable custom power supplies since 1995. It offers a complete line of switch-mode power supplies and power converters for a variety of markets including defense, industrial, aircraft, VME, and telecom. Defense and military single-phase, three-phase, and dc-dc power supplies are one of the core competencies of the Aegis Power Systems team. Products include VMX and VPE power supplies. Its innovative designs have been used in a variety of defense applications including communications systems, various weapons, mobile field operations, aircraft and shipboard control systems, rack mount technology, and perimeter security operations.

Aegis Power Systems can fulfill various military and defense power supply requirements including Mil-Std-810, Mil-Std-461, Mil-Std-704, Mil-Std-1399, FCC Class A, and others. Rugged military COTS and custom power supply designs are the company's specialty. Aegis Power Systems is a veteran owned small business. All products are designed and manufactured in the USA using high-quality materials and expert craftsmanship. For more information, see the [website](#).

AJ's Power Source

(Land O'Lakes, Florida)

Established in 1987, AJ's Power Source is a leading-edge power supply manufacturer. The engineering, development and manufacturing of these custom military power supply solutions carry the highest quality and mean time between failure (MTBF) rates. These power solutions include military COTS MOTS power supply, ruggedized military power supply, military ac-dc power supply and rugged military power supply. The ruggedized high-performance power conversion solutions in the MIL-STD series include ac-dc power supplies, dc-dc converters, dc-ac inverters, military uninterruptible power supplies (UPSs), power distribution, ac-ac transformers, pluggable power, conditioners and custom power solutions. Chassis configurations are rackmount, vehicle mount, standalone, baseplate cooled, transit case, submersible and semi-custom. AJPS has been supplying high-end custom power supply solutions for over 25 years. For more information, see the [website](#).

Astrodyne TDI

(Nashua, NH)

Reliability is the key driver in mission critical applications, and for over 50 years, Astrodyne TDI has been delivering complex power solutions to the military marketplace. Its products power many of today's sophisticated defense equipment on land, air, and sea meeting the strictest electrical and mechanical requirements. Many variations of custom power systems have been designed to meet stringent MILSTD specifications and endure the harsh environmental requirements of today's battlefields. Astrodyne TDI also provides an array of COTS power supplies and EMI filter products which can dramatically reduce cost and time to market and enable today's military contractors to compete globally with their systems. These products have a strong field demonstrated reliability record in industrial applications and are well suited for integration into military systems. As an approved military supplier to the U.S. Department of Defense, Astrodyne TDI is compliant to the regulatory requirements as mandated by all defense branches. The company also owns its manufacturing facilities both in

the U.S. and China to optimize the balance of cost effectiveness, manufacturing flexibility, and regulatory requirements. Products include COTS ac-dc and dc-dc bricks, and ac-dc power supplies that are liquid cooled, air cooled, or outdoor sealed. The company also offers custom power supplies. For more information, see the [website](#).

BC Systems

(Setauket, NY)

Since 1985, BC Systems, a veteran-owned business, has supplied custom military power supplies, power controls and other quality products to major defense contractors and to the United States military. The company's only focus are products for the U.S. military. Unlike its competitors that also make commercial products and have the difficult task of keeping component parts and procedures separate; all of BC Systems' parts, processes and procedures are targeted for the military market. In-house capabilities include computer-aided design, computer-aided manufacturing, automated test, pick-and-place machines, magnetic design and manufacturing, EMI test chamber, thermal chambers, and random vibration equipment. The company's military power supplies range from 10 W to 30 kW. It uses the latest in solid-state technology to produce quality power supplies for all military platforms, including ground, air, and shipboard. The company considers itself "the 3 phase PFC experts." For more information, see the [website](#).

Behlman Electronics

(Hauppauge, NY)

Behlman Electronics, an ISO 9001:2008 company, designs and manufactures a wide array of power products including ac power supplies, frequency converters, inverters, uninterruptible power supplies (UPSs), COTS dc-dc, ac-dc and dc-ac power sources, VPX/VME power supplies as well as modified standard power supplies and railroad signal sources for commercial, industrial and military mission-critical applications.

Behlman is a U.S. manufacturer with a proven ability to solve any power requirement, and it supports its products with personal service that exceeds even your highest expectations. Its expertise includes a diverse line of products, to meet the needs of production test, facility power, aerospace and avionics, simulators and trainers, gas and oil exploration, railroad signal, utility, telecom, COTS dc-dc and ac-dc and VITA-compliant VPX and VME power supplies. For more information, see the [website](#).

Bren-Tronics

(Commack, NY)

At its inception in 1973, Bren-Tronics was a supplier of primary batteries for military and industrial applications, later shifting its focus to secondary (rechargeable) batteries. The company's portfolio now also includes battery chargers, battery accessories and systems. The company's chargers deliver solutions for ac-dc conversion, power from solar panels and fuel cells and wind, as well as vehicle-mounted applications or in backpacks. For more information, see the [website](#).

Espey Manufacturing & Electronics

(Saratoga Springs, NY)

Espey Manufacturing & Electronics designs, develops, tests and manufactures specialized military and rugged industrial power supplies and transformers for use in harsh or severe environment applications. An original equipment manufacturing (OEM) company, Espey has been in business for more than 85 years designing and developing "Best in Class" products in support of its government and the warfighter. Espey is a fully vertically integrated manufacturing company with product development, engineering, power supply and transformer assembly, sheet metal fabrication, machining, painting/coating, electrical/mechanical assembly and transformer coil winding capabilities all on-site at its 150,000+ square foot facility located in Saratoga Springs, NY.

Espey is a highly successful small business that is ISO9001-2008 & AS9100C certified. The company's standard military and aerospace power solutions include "Design to Spec", MOTS, configurable, pluggable power, modular and standard configurations. Espey routinely designs, develops and tests military power supplies and transformers to standards that include MIL-STD-810, MIL-STD-461, MIL-STD-1275, MIL-STD-1399, MIL-STD-704 and MIL-STD-108 in its state-of-the-art testing facilities. For more information, see the [website](#).

Gaia Converter

(Le Haillan, France)

Gaia Converter is a manufacturer of high-reliability dc-dc converter products, PFC front end modules and related input protection devices. Strongly focused on power modules, Gaia Converter has developed over 3500 off-the-shelf (COTS) solutions for a wide range of aerospace and military, transportation and industrial applications, from 4 W to 350 W or more. Gaia Converter was founded in 1993 near Bordeaux, France, in the heart of the Aerospace Valley industrial cluster. Ever since, the company has thrived exclusively in rugged environment applications and brought to the market its concept of Modular Power Architecture to allow simple design of complex power supplies. The company's dc-dc converters feature ultra wide input ranges, high power density, and compliance with Mil-Std-461, 1275, 704 & DO-160 standards. For more information, see the [website](#).

Martek Power

(Torrance, California)

Martek Power designs and manufactures a wide range of switching power supplies and linear power supplies. They include standard, semi-custom and custom ac-dc power supplies, dc-dc power converters, dc-ac power inverters and EMI filters for military, aerospace, medical, railway, automotive, computing, data storage, telecom, networking, instrumentation and industrial applications. The company's switching and linear power supplies range in output power from 1 to 50,000 W. With its broad range of field proven standard power supplies, it is capable of providing unique custom power solutions that meet special requirements of its customers worldwide in all market segments it serves.

Martek Power provides military-grade and commercial off-the-shelf (COTS) power conversion solutions. Its power supply development and manufacturing facilities located in Torrance, California and in Lyon, France are both AS9100/ISO9001 certified and are equipped with state-of-the-art environmental and EMI screening facilities. Most of Martek Power Abbott's standard military power supply and power converter units are designed with overtemperature protection, output overvoltage protection, output short circuit protection, are environmentally sealed, and are MIL-STD-461 and MIL-STD-810 compliant. Its semi-custom power supplies/value-added designs offer simple and flexible solutions for small and medium volume production runs with minimal NRE and fast lead-time. It also offers full-custom solutions for higher volume applications. For more information, see the [website](#).

Milpower Source

(Belmont, New Hampshire)

For over 30 years Milpower Source has been delivering industry leading ruggedized power supplies, designed to MIL standards that can be modified or customized for a customer's unique requirements. Milpower Source claims it routinely succeeds where others have failed, and delivers an exceptional product, backed by high-quality service, to satisfy the most difficult application requirements. Products include dc-dc converters (including 270-V input), ac-dc power supplies, ac+dc-dc converters, dc-ac inverters, VITA-62 units, shipboard UPSs, power distribution units, battery equalizers, and custom solutions. For more information, see the [website](#).

Modular Devices

(Shirley, New York)

Modular Devices (MDI) designs and manufactures a wide range of standard and custom power supplies for aerospace, military and industrial use. MDI has a complete thick film hybrid capacity on site, which permits us to produce unique power electronic functions for our customers quickly and efficiently. MDI can also meet challenging radiation and aerospace requirements. With its high technology power supply capability and custom hybrid facility, MDI is uniquely positioned to apply the best and most appropriate packaging technology to diverse and challenging requirements. In addition to full hybrid power supplies, the company offers modified standard hybrids converters and assemblies of hybrids. MDI's product capacity includes standard, off-the-shelf dc-dc converters to 80 W, operating frequencies to 400 kHz, and power densities to 40 W/in³; custom variations of standard dc-dc converters to 120 W; design and construction to military, commercial space, aerospace, and other requirements. For more information, see the [website](#).

Pioneer Magnetics

(Santa Monica, California)

Pioneer Magnetics, now part of United States Technology, has been in business for over 60 years designing and manufacturing the highest quality switching power supplies. PMI offers low voltage and high current products ranging from <1,000 W to >30 kW per box. COTS, isolated and non-isolated, intelligence as well as

“thousands” of combinations, such as racks/power shelves, are available in standard and unique sizes. Products are available in 1U, 2U and 3U configurations. PMI typically modifies and customizes standard platforms ensuring that its customers get exactly what they need. In addition to the standard fan motor/air cooled product line, liquid-cooled power supplies are available for that “special requirement.” Pioneer Magnetics has a state-of-the-art power supply repair facility. In addition, PMI supports many older programs from power-supply manufacturers no longer in business and/or no longer supporting their own older products. Pioneer Magnetics is ITAR registered with the U.S. Department of State. For more information, see the [website](#).

Polytron Devices

(Paterson, New Jersey)

Polytron Devices has been a designer and supplier of standard and customizable dc-dc converters, switching power supplies and linear power modules for 45 years. The company pioneered the development of linear power supplies and shipped many of the first units. It also sells to other well-known power supply companies who private-label its products for sale and distribution. The company’s linear power supplies meet all relevant MIL-STD-810F standards for use in military applications. They have passed a series of required tests that check for their ability to withstand extreme temperatures, high altitude, vibration and mechanical shock. Applications include military vehicles, communications systems, radar systems, guidance systems, targeting systems and sonar systems. All of its linear power supplies and many of its other products are designed, manufactured and tested in the company’s 10,000 square foot manufacturing facility in Paterson, NJ. It also works with manufacturing plants throughout the world to expand the company’s reach and produce components at the best possible cost. For more information, see the [website](#).

Prime Power

(Hampstead, New Hampshire)

Prime Power was founded in 1991 for the express purpose of providing quality power conversion products for the military, aerospace and high-reliability market places. The company has the technical experience, manufacturing capacity, and comprehensive product offering to be a true partner in the development of the customer’s military power system needs. Prime Power’s experience makes it well suited as a supplier for build-to-print manufacturing and test services for military applications.

For more than 20 years, the company has specialized in solving power supply obsolescence issues on programs that are mission critical and need to be fielded for an additional 20 to 30 years. Prime Power is able to produce a form, fit, and function replacement using minimal documentation or specifications on the original power supply from its customer. With a library of over 2000 mil qualified, field proven designs Prime Power can quickly come up with a solution to be tested in the customer’s system. Prime Power specializes in custom power supply design and in dc-dc power converters, ac-dc power supplies, 1-W to 10-kW systems, and complete turn-key systems. Prime Power has designed power supplies specifically for missiles, smart bombs, ground vehicles, radios, and electronics on tanks, submarines and Bradley fighting vehicles. For more information, see the [website](#).

Rantec Power Systems

(Los Osos, California)

Rantec Power Systems is a designer and manufacturer of power supplies for the military and aerospace tier-one markets. It is an engineered solution company, with expertise in all aspects of power supply design, manufacturing and test. Rantec Power Systems strives to be an extension of the customer’s team, utilizing its expertise to help the customer achieve its goals. The company’s core strengths are providing competitive, reliable solutions for demanding applications. Products include military custom low-voltage power supplies designed to specification for tactical applications/harsh environments and military standard product COTS power supplies, which include military-grade VME and VPX integrated plug-in solutions. For more information, see the [website](#).

Schaefer

(Hopkinton, Massachusetts)

Schaefer excels in mission-critical military power supply solutions designed for harsh and rugged environments. From COTS (commercial off the shelf) or MOTS (military off the shelf) to custom solutions, the company’s robust designs, high reliability, increased mechanical strength, multiple cooling topologies (liquid-cooled or fan cooled) and breadth of product provides the most reliable power military converters for military power supply

applications. Not only does the company meet the toughest of MIL STD requirements including MIL STD 810 and MIL STD 1399, it is also ITAR compliant and JCP listed. From high-power dc-dc converters, ac-dc power supplies and battery chargers to dc-ac inverters and frequency converters (plus active harmonic filters and electronic loads) Schaefer's power solutions are specifically developed for the military communication, laser, radar, sonar, subsea, and mission critical systems markets. For more information, see the [website](#).

SynQor

(Boxborough, Massachusetts)

SynQor is a supplier of power conversion solutions, primarily modular dc-dc converters, to the communications, computing and industrial markets with the last category extending to instrumentation, medical and military applications. The company's MilQor series of Mil-COTS dc-dc converters, EMI filters and PFC modules and its MilQor series of high-reliability dc-dc converters and EMI filters bring SynQor's field proven high-efficiency synchronous rectifier technology to the military/aerospace industry. The Mil-COTS dc-dc converters come in isolated, high-voltage nonisolated, and bus converter styles. Mil-COTS converters with Mil-COTS filters are designed to meet MIL-HDBK-704, RTCA/DO-160 Section 16, 17, 18, MIL-STD-1275, MIL-STD-461, DEF-STAN 61-5 (part 6)/(5,6). For more information, see the [website](#).

Vicor

(Andover, Massachusetts)

Vicor designs, manufactures and markets modular power components and complete power systems used in the aerospace and defense electronics, enterprise and high-performance computing, industrial equipment and automation, telecommunications and network infrastructure, and vehicles and transportation markets. Engineers use the combined advantages of Vicor components to create compact, highly functional, economical products with streamlined development cycles that minimize time to market. The company is known for leveraging its proprietary power supply topologies and packaging technologies to create very high density power modules. Military power products include MIL-COTS ac-dc converters, dc-dc converters, filters and power systems. For more information, see the [website](#).

VPT

(Blacksburg, Virginia)

VPT provides power conversion solutions for use in avionics, military, space, and industrial applications. VPT offers high-reliability dc-dc converters, EMI filters, accessory power products, and custom engineering services for the rapid development of critical power systems. For over 20 years, VPT's award-winning dc-dc converters, EMI filters, accessory products, and engineering services have powered systems for world class organizations and programs. Long-standing relationships with various partner organizations including Virginia Tech's Center for Power Electronics Systems, Delta Electronics, and parent company HEICO ensure that VPT leverages its corporate resources to deliver innovative power conversion products with efficient, cost-effective technology. VPT's research and development headquarters are in Blacksburg, Virginia, with manufacturing in certified facilities at Delta Electronics in Taiwan and at PPI-Time Zero in Virginia. Sales and marketing facilities are located in the aerospace hub of Seattle, Washington. For more information, see the [website](#).

XP Power

(Sunnyvale, California)

XP Power is committed to being a leading provider of power solutions, including ac-dc power supplies and dc-dc converters. XP offers total quality, from in-house design in Asia, Europe and North America through to manufacturing facilities around the world. The company is said to offer the widest range of power products available from one source and unrivalled technical and customer support, aiding both vendor consolidation and cost reduction programs. XP has 32 sales offices throughout Europe, North America and Asia.

Power solutions for defense and avionics systems must comply with a wide range of challenging technical and logistical requirements to be installed and operated reliably in these demanding mission critical, land sea and air platforms. The company's engineering and project management teams are experts in this area. The company's products are designed to meet harsh requirements and undergo extensive environmental testing, safety approvals, design verification testing (DVT) and HALT testing. Its engineering teams are located worldwide to be close to customers, they use only approved component suppliers and components that meet its conservative design guidelines, ensuring reliability is designed in from the ground up. For more information, see the [website](#).