



WHITE PAPER ON
TEKGARD'S HEATING, VENTILATION AND AIR-CONDITIONING CAPABILITIES

"We Work Everywhere So You Can Work Anywhere"

Prepared By:

Joshua M. Carson

Tekgard, Inc.
3390 Farmtrail Road
York, PA 17406

<http://www.tekgard.com>

CAGE Code: 3C0M7

DUNS Number: 879202919

NAICS Codes: 333415, 541330

WHITE PAPER
Tekgard's Heating, Ventilation and Air-Conditioning Capabilities

By Joshua M. Carson, BDM

Tekgard Incorporated
3390 Farmtrail Road
York, PA 17406
Phone: (717) 881-9327
Fax: (717) 854-0045
Jcarson@Tekgard.com
<http://www.tekgard.com>

INTRODUCTION

Tekgard prides itself on being able to provide our customers the most premier thermal management systems capable of meeting any heating and cooling requirement they may need to sustain operational readiness. We build the best for our customers because we demand the best from ourselves. Every system is hand built and goes through a rigorous qualification and testing process to ensure each unit we provide meets our customer's standards and specifications. We employ a thorough engineering and manufacturing process that emphasizes strict adherence to safety, technical instruction and attention to detail to ensure a quality product every time. Our quality assurance and safety programs are top notch and have been formally recognized by the State of Pennsylvania as the recipient of the 'Governor's Award for Safety Excellence.'

COMPANY OVERVIEW

Tekgard is an ISO 9001:2008 Small Business that specializes in designing and manufacturing customized Environmental Control Systems that provide thermal management protection to critical equipment and comfort to personnel operating in extreme weather conditions. Tekgard collectively has over 100-years of experience and expertise in the heating, ventilation and air-conditioning industry and has supported numerous government platforms over the past decade. Our engineering resources include mechanical, electrical and thermodynamic capabilities that allow us to provide a full array of technical services that ensure quality performance and reliability.

Tekgard is a leading manufacturer of custom environmental control systems, heat transfer, and refrigeration support equipment for the military. Conveniently located in York, Pennsylvania, Tekgard's facilities have over 90,000 square feet dedicated to designing, manufacturing, and testing all our units. Tekgard possesses all necessary personnel, facilities, experience, equipment, vendor base and supply chain management skills to successfully manage and execute all requirements associated with the military.

Tekgard's leadership and experience evolved with the demanding needs associated with our Nation's commitment to safeguard our country at home and abroad. Tekgard is committed to excellence in the design and manufacture of reliable, safe and user friendly equipment for our military. We understand the uniqueness of the military and their mission, and have become subject matter experts to offer customized

solutions for them and their support equipment, to ensure full operability and quality performance in the harshest environmental conditions.

The cornerstone of Tekgard's success has been to provide our customers with dependable equipment and service with unparalleled technical support by incorporating core values into our business practices.

- **Trust & Reliability.** Tekgard is committed to our customers and understanding their needs. Our engineering expertise and manufacturing experience collectively gained during many years of Defense contracting has enabled Tekgard to continually design and build equipment that performs reliably in any environment and application. Rest assured you can trust that Tekgard's equipment will always work and will provide the quality performance you need to carry out your mission successfully.
- **Cultivating Team Collaboration.** Tekgard personnel stand ready to work alongside our customers through every step of a project to better understand their needs and expectations. We strive to work together as a team with our customers to ensure a seamless process through design to implementation, their success is our success.
- **Commitment to Quality.** Tekgard's commitment to quality is one of our Top Priorities! We pride ourselves on manufacturing products safely and by following technical instructions at all times. Tekgard has worked hard to achieve and maintain ISO 9001:2008 certification; we routinely conduct internal and external audits to ensure the highest quality assurance and safety standards.
- **Delivering Superior Service.** Tekgard's commitment is to work with our customers in a timely, professional manner to accomplish the results as expected. We are always available to answer questions, provide information and solutions. Tekgard engineers and technicians monitor system performance following installations to ensure maximum operating performance. Dependability is Tekgard - service before, during and after deployment.



CORE CAPABILITIES

Tekgard has achieved a great level of expertise in the heating, ventilation, and air-conditioning industry and focuses on delivering six-core capabilities to our military.

- **Manufacturing Environmental Control Units (ECU).** Tekgard designs, engineers and manufactures a family of ECUs that can provide heating and cooling solutions for any military platform or application. With over 10,000 units deployed worldwide, our MIL-SPEC ECUs are customized to offer a wide variety of heating and cooling options to meet any requirement. To accommodate the unique environments our military operate in, our ECUs are rated to perform at any desired ambient condition and are provided in unitary, vertical, horizontal, and split configurations. Our systems cooling capacity ranges from 2 – 20 Tons (24,000 – 240,000 BTU/hr) and heating capacity ranges from 4 – 25kW (13,657 – 85,000 BTU/hr). In addition, we

have provided liquid cooling systems with capacities ranging from 8 – 24kW (27,300 – 81,900 BTU/hr). Our ECU systems have gone through rigorous qualification testing to ensure full compliance of military standards and specifications. Some of the qualifications our ECUs have achieved include: MIL-STD-810 (Environmental Conditions Testing), MIL-STD-461 (Electromagnetic Interference & Compatibility Testing), MIL-STD-188-125 (High-Altitude Electromagnetic Pulse Testing), and MIL-STD-1472D/G (Human Engineering Design).

- **Manufacturing Accessories & Support Equipment.** Tekgard also manufactures accessories and support equipment for our ECUs. Products include items such as remote interfaces, adapters, plenums, and ducts.
- **Non-Recurring Engineering (NRE) Service.** As a subject matter expert in the heating, ventilation and air-conditioning industry, Tekgard provides engineering services dedicated to one-time cost efforts for research, develop, design and testing of new heating and cooling technologies. We have state-of-the-art test equipment and a prototype chamber compliant with the ASHRAE 37 indoor air enthalpy method of cooling capacity measurement at our facility to assist in new system validation.
- **Field Service, Training & Technical Writing.** Tekgard offers onsite technician service support on all our equipment, wherever our customer's need us. Typical field service work includes: warranty servicing, functionality testing, familiarization training, and non-warranty support. In addition, we provide system familiarization and certification training at our facilities for large groups of personnel and have hosted many successful training events to our domestic and foreign partners. We also provide technical writing services including ECU and System-Level Operation and Maintenance Manuals.
- **Repair of Repairable (ROR)/Depot Service.** Tekgard provides ROR and depot level servicing to restore all types of ECUs and support equipment back to working conditions and original specifications, regardless of original manufacturer. We have provided this type of service for a multitude of customers to help reduce cost and spending for them.
- **Spare Parts Supply.** Tekgard assist our customers in providing a wide variety of spare parts to help maximize their heating, ventilation and air-conditioning systems operational life.



PAST PERFORMANCE

Tekgard is proud to have served the heating and cooling needs of the military for many years, and look forward to continuing to serve them in the future. We have provided ECUs and engineering support for many of the prominent, ongoing military platforms. For over the last decade we have provided heating and cooling to hard/soft shelter systems, trailer systems, wheeled vehicle systems, UAV ground stations, radar systems and missile systems. The following are just a few of the many military programs Tekgard has supported over the years:

- **The Distributed Common Ground System (DCGS-A) Program.** A military program of fixed and deployable multi-source ground processing systems that support a range of intelligence, surveillance, and reconnaissance systems to satellites, U-2, F-16s, and UAV systems. Tekgard ECUs played a crucial part in providing the necessary heating and cooling conditions for DCGS to operate successfully.
- **U.S. Army's Standard Integrated Command Post System (SICPS) Program.** Provided thousands of 5 and 12 Ton ECUs to support DHS's (DRASH) Trailer Mounted Support System (TMSS) in conjunction with Northrop Grumman's Command Post Platform (CPP) which provided the Army with high mobility tactical operation centers that could be rapidly deployed for command, control and communications on the battlefield.
- **Patriot Air and Missile Defense System Program.** Tekgard developed ECUs to support DRASH's shelter and trailer systems to provide heating and cooling to the assist the Patriot system of carrying out its mission of detecting and defeating various threats. Our equipment proved to be reliable in some of the most hostile environments with harsh weather conditions.
- **Terminal High Altitude Area Defense (THAAD) Program.** An Army defense system that was able to shoot down short, medium and intermediate ballistic missiles during the terminal phase using a hit-to-kill approach. Our ECUs provided the necessary cooling capacity that allowed the THAAD system to carry out its important missions.
- **AN/TPS-77 Long-Range Radar System Program.** A Lockheed Martin multi-mission ground-based radar system that provides complete air surveillance to military applications for more than 30-nations on six-continents. Our environmental control systems and technical support has ensured the operational sustainment of this important radar program.

SUMMARY

Tekgard is driven to exceeding expectations and is always focused on our customer's needs. We never accept 'No' or 'It Can't Be Done' but rather discover the ways to 'Yes' and 'It Can Be Done'. We continue to partner with major defense contractors to help support the needs of our customers. Tekgard embraces the concept of 'Team Collaboration' and does this by building trust and leveraging our expertise between our partners and customers we support. Tekgard is dedicated to 'Building The Best Product and Providing The Best Service' because We Demand The Best, from ourselves and from our partners.

If you are interested in discussing ways Tekgard can best support your organization please contact:

Mr. Joshua Carson, BDM
 Tekgard, Inc.
 Phone: 717-881-9327
Jcarson@Tekgard.com