

# Outsourcing to Repair Depot Saves Money, Improves Product Quality

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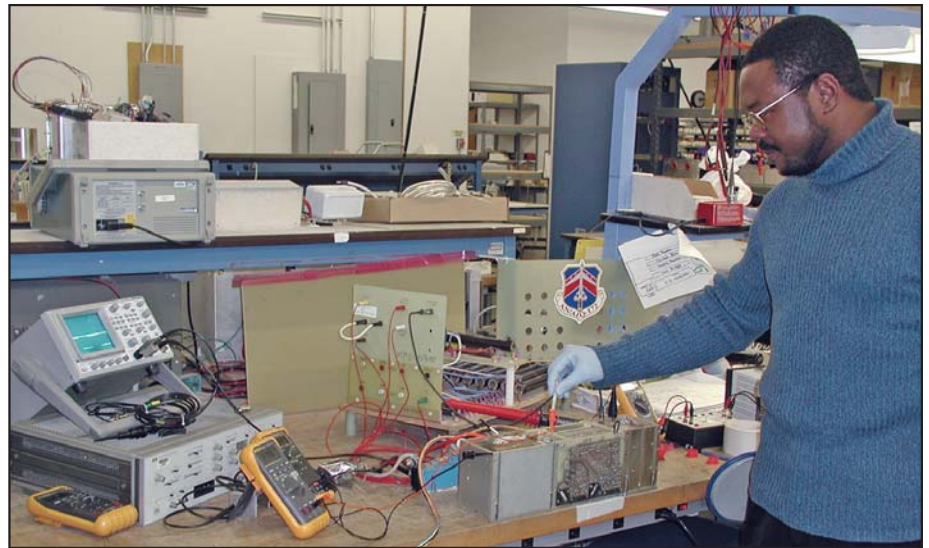
Outsourcing is old hat to most OEMs; the electronic manufacturing services industry is huge, especially in low wage areas and in highly automated U.S. plants. But what about service and repair? This is labor intensive, but it's often not feasible to send product back to China or Mexico for service work. What's the answer? Outsourcing to specialists, of course.

To reduce labor and equipment costs, improve product quality and remain tightly focused on core competencies, many leading manufacturers outsource product test, repair and refurbishment to firms providing depot repair services.

These firms reduce labor costs for their manufacturing partners by providing highly qualified test technicians who can produce accurate test results with maximum efficiency. And, unlike a production floor employee saddled with the responsibility to "make time" for test and repair on top of other responsibilities, test and repair specialists improve, rather than impede, productivity.

Internal repair departments are not only an inefficient use of human resources, but also require a considerable investment in specialized equipment. In the microwave testing arena, for instance, a test system can cost upwards of \$60,000. By outsourcing to a test and repair specialist, manufacturers can reduce capital equipment costs significantly.

A successful depot repair service provider can also identify a greater



*dB Control is now the prime depot overhaul facility for high-voltage power supplies used in U.S. Air Force's AN/ALQ-172 radar warning system.*

number of defective products, thus reducing the number of failures in the field. Plus, the incoming inspections provided by depot repair service firms give manufacturers the timely, detailed failure reports data they need to improve product quality.

dB Control designs and manufactures high-power microwave amplifiers, radar transmitters, high- and low-voltage power supplies, modulators, and custom assemblies for military and commercial applications. We have a successful track record working with RF and microwave assemblies and high-power Traveling Wave Tube Amplifiers (TWTAs), and have the equipment to test for temperature, altitude, vibration and shock – all

conditions affecting quality. In addition, our technicians are acutely aware of safety procedures for handling high-voltage products. We began offering depot test, repair and refurbishment services in 1999 and today it is an important segment of our business.

## Selecting a Partner

Outsourcing depot repair requires planning and research. Manufacturers must first consider their long-term goals. Do they simply want to offload product repair and refurbishment to reduce costs and improve quality? Or do they want the depot repair service provider to become a true manufacturing partner involved in the initial product design and develop-

ment? A close working relationship between the two companies is a catalyst for innovation.

Manufacturers must also thoroughly research the depot repair service's human resources. How senior is their staff? Do they have experience with the manufacturer's products? Does the firm attract talented employees?

Profitable and growing steadily since 1990, dB Control has a reputation as a company that values its employees and invests in their professional growth. As a result, we can handpick the most seasoned high-voltage test technicians and specialists. The longevity and expertise of our staff – ensures that we meet deadlines with reliable services – perhaps the greatest litmus test of a successful depot repair service provider.

In addition to looking at staff, the repair depot's facility itself should be evaluated. How modern is their equipment? Do they offer environmental testing? What is their rejection rate? Are they flexible enough to provide small-run or specialized services? What about blanket orders with just-in-time (JIT) delivery? Can they ramp up to meet expanding test and repair needs?

dB Control's 22,500-square-foot manufacturing facility includes a modern laboratory for testing high-voltage transformers, microwave and RF assemblies, high- and low-voltage power supplies, inductors and TWTAs. We also provide specialty contract manufacturing services, including encapsulation and conformal coating. And we can provide these services for unique, one-of-a-kind products or entire product lines. Our ability to listen to our clients' needs and develop creative solutions to meet stringent specifications has helped us service more than 150 complex products and assemblies a year, with a rejection rate of less than one percent.

## Important Intangibles

While information about hardware, services and facilities is easy to obtain, one of the less tangible attributes is the



*Test and repair capacity is an important factor when evaluating depot repair services.*

company's ability to develop a strong working relationship with their manufacturing partners. The best way to uncover the depot repair service firm's true reputation is to go beyond what the company says about itself and ask for customer references – and then engage these customers in in-depth conversations.

Ask how well the depot repair provider responded to a crisis. If product failures spiked, were they willing to contribute their expertise to help identify the cause? How well did they represent their manufacturing partner when interfacing with the product's end users?

Since 1999, Warner Robins Air Logistics Center has sent field AN/ALQ-172 HV power supplies to dB Control, where they are repaired, refurbished and integrated with node traveling wave tubes before going to Teledyne Technologies for final assembly (Figure 4). The ALQ-172 Jammer provides aircraft with electronic countermeasures (ECM) against airborne- and ground-based fire control radar systems and associated missiles.

Developed in the early 1980s as an upgrade to the ECM suite for the B-52G/H aircraft, the ALQ-172 will enable the B-52 to continue to be an important aircraft for the U.S. Air Force for years to

come. As the result of our long-term relationship with Warner Robins, and the experience we've accumulated with this product, dB Control is now considered a prime depot overhaul facility for the high-voltage power supplies used in the AN/ALQ-172 Countermeasures System (CMS) radar warning system.

It is this real-world type of information that accurately identifies the most qualified depot repair service providers. When all the research is done and attributes compared, the firm that has the best reputation for reliability and long-term service is usually the same firm that will be most dedicated to the manufacturers' success.

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