



**SMALL BUSINESS INNOVATION PROGRAMS**  
**EXPLORED INNOVATIONS**

**SECURING RESOURCES FOR US DEFENSE & COMMERCIAL INDUSTRIES**

**TOPIC NUMBER:**  
DLA171-002

**TOPIC TITLE:**  
Reverse Engineering  
Technical Data  
Packages for  
Development of  
Alternate Sources of  
Supply for DLA NSNs

**CONTRACT  
NUMBER:**  
SP4701-18-P-0013

**SBIP COMPANY:**  
Spectral Labs, Inc.  
San Diego, CA

**TECHNICAL  
PROJECT  
OFFICE:**  
Reverse Engineering

**PUBLISHED:**  
2019

Made in the USA



## FORCE READINESS AND LETHALITY

### Spectral Labs Becomes a Small Business Source for Military Battery Charger

Spectral Labs, Inc. a small business in San Diego, CA that specializes in the design and procurement of limited-rate production components, recently redesigned and replaced the Multiple Bank Field Radio Battery Charger (NSN 6130-015487556) for the Department of Defense (DoD). Through a Defense Logistics Agency (DLA) Small Business Innovation Programs (SBIP) contract, Spectral Labs procured two of the original limited source chargers – one for tear-down and inspection and the other for performance characterization – and through reverse and value engineering, optimized both the design and cost of the part. The Spectral Labs version of the six-bank battery charger now saves the DoD up to 35% cost of the original item.

In order to become a qualified source of supply, Spectral Labs approached the task, methodically by following a stringent qualification process, which included:

1. Obtaining samples of the original battery charger and the batteries it supports.
2. Characterizing the charger across temperature extremes, battery variant capacity and battery condition.
3. Conducting the reverse and value engineering required to create a design that matches the performance of the RF-5853-CH106 at a lower cost.
4. Developing the Source Approval Request (SAR) package required by DLA to evaluate and qualify the item for future procurement.
5. Obtaining the required FCC and UL certifications to ensure the product will not interfere with nearby systems and is safe to operate.

The battery charger was selected by Spectral Labs as it fits well within their engineering and manufacturing capabilities; and also aligns with their staff's strong interest in power management and battery technology.

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Flexible Fuel Bladder. Image provided by Spectral Labs, 2019.