

# Case Study

## Mil/Aero Applications

*"Among other sophisticated technical advantages, the Falcon ED Series UPS is lightweight and compact, compared with the UPS we were getting from our previous supplier."*

*– Engineer,  
Kirtland AFB, New Mexico*



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## Falcon Ensures Power to eWarfare System Onboard the KC-135 Stratotanker

**W**hen it comes to ensuring power to the KC-135 Stratotanker's critical in-flight electronic warfare systems, engineers at Kirtland Air Force Base take no chances.

"Our in-flight eWarfare systems – based on a platform of PCs and high-power microwave subsystems – depend on an Uninterruptible Power Supply to bridge the power transfer between the ground cart and the aircraft's power system, which occurs on every landing and take-off."

"The sophisticated eWarfare system is vital to support fighter aircraft during routine flights and in battle. Currently, we're working on an upgrade to our system based onboard the KC-135 Stratotanker for the U.S. Army. The aircraft has a three-phase 30kW frequency converter available so that the 400Hz generated by the aircraft's power system can be dropped down to 60Hz to power the computer and microwave-based electronic hardware sub-systems that use 208Volt/60Hz to operate.

"We used a line-interactive Uninterruptible Power Supply (UPS) for several years, then found that the Falcon ED Series features a smaller, lighter and more compact rack-mount form factor, along with a true double-conversion, on-line design. The Falcon ED 2.4kVA rackmount UPS was priced higher than our existing UPS, but we were happy to pay for the upgrade. We were pleased to find that the on-line design gives us the ability to use the Falcon unit as both a battery back-up system and a frequency converter – freeing up capacity of the existing on-board converter. The Falcon unit is able to take in the 400Hz generated by the aircraft's power system and turn that into 60Hz to power our eWarfare system. This is a great benefit.

"Size and weight are big factors too. The 2U (3.5 inches) high Falcon ED 2.4kVA RM UPS was a whopping 1U (1.75 inches) smaller than

the unit we were using; giving us the ability to free up the vertical space available in the rack. Though the KC-135 can carry 83,000 pounds of cargo, every pound we can strip out of the rack is a huge plus. The Falcon ED 2.4k RM is about 100 pounds lighter than the UPS it replaced, representing a significant savings in weight.

"We also liked the fact that the Falcon ED Series' on-line design performs power conditioning and regulation in a more complete fashion. The Falcon unit applies a double-conversion process and totally separates the input power from the load. Initially, power is first rectified; then regulated and inverted back to AC. This process removes all kinds of dirty power, like noise and damaging transient surges. And, when our company moves to integrate more sensitive electronics in the future, the precise regulation and zero-transfer time will be very beneficial."



### Falcon ED Series 2.4kVA RM Features:

- True Double Conversion Design
- Precision Output Voltage & Frequency
- Pure Sinewave Output
- Wide Input Frequency Range
- 50, 60 & 400Hz Frequency Conversion
- Voltage Conversion Models Available
- Eliminates Generator Frequency & Voltage Drift
- Superior Brownout, Surge and Transient Protection
- Battery Backed Up Models Available