

# Lightweight UHF SATCOM MUOS Diplexer

## Problem Statement

Competing diplexer designs employ bulky, machined cavity housings and cannot deliver full duplex UHF SATCOM communications capability in a compact, affordable, light weight package. Cobra Design & Engineering, Inc. has developed a unique design approach that results in a lightweight MUOS Diplexer that is rugged enough to withstand the tough environments of portable or deployable applications while meeting the electrical requirements of a full duplex UHF SATCOM Diplexer and MUOS Frequency Bands.

## Package Flexibility

This design approach is unique in the fact that it can quickly be reengineered to adapt to different package shapes. Only a handful of components would require changes to accomplish this task. Below are two end views of alternate configurations.

5.37 W x 1.28 H x 3.51 L

3.41 W x 2.46 H  
x 3.51 L

## Package Dimension and Weight



Currently designed for multiple applications

Size: Length = 3.51" Height = 1.87" Width = 3.94"

Unit Weight: 1.48 lbs (23.8 oz)

## Specifications

Unit is designed to meet the following MIL-STD Qual Tests

| Test                        | Specification  |
|-----------------------------|--|
| High Temperature, Storage   | MIL-STD-810F, Method 501.4, Proc I   |
| High Temperature, Operating | MIL-STD-810F, Method 501.4, Proc II  |
| Low Temperature, Storage    | MIL-STD-810F, Method 502.4, Proc I   |
| Low Temperature, Operating  | MIL-STD-810F, Method 502.4, Proc II  |
| Humidity                    | MIL-STD-810F, Method 507.4, Proc I with relative humidities from 5% to 95%, Non-condensing |
| Salt Fog                    | MIL-STD-810F, Method 509.4, Proc I, Salt solution shall be 5% NaCl                         |
| Catapult Launch Shock       | MIL-STD-810F, Method 516.5, Proc VIII  |
| Shipboard Vibration         | MIL-STD-167-1A, Type I   |
| Size and Weight             | ANSI/NCSS Z540-1-1994  |

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