

UHF Multiplexer (UMUX)



Overview

Northrop Grumman's UHF Multiplexer (UMUX) is an integrated line replaceable unit (LRU) which combines up to six UHF RF signals into two antennas. The LRU contains a six-port UHF multiplexer along with cosite filters for VHF and L Band signals as well. The LRU is contained in a small, lightweight, rugged package suitable for nearly any platform.

The UMUX operates with waveforms including SINGARS, VHF ATC, SRW, UHF ATC, Have Quick, EPLRS, and WNW.

UMUX simultaneously reduces the number of antennae required on a platform while suppressing and managing the effects of cosite interference on collocated radios. The UMUX combines six UHF radios (GMR UHF radios) to two antenna ports.

UMUX supports a variety of users in tactical environments where multiple radios must operate in close proximity.

Key Features

Antenna Reduction

- Minimizes visual antenna signature
- Disguises command posts
- Reduces remote antenna set-up and tear-down
- Reduces electronic parasitic effects
- Enables six GMR UHF radios to operate simultaneously via two antennas using low loss combining; adaptable to other radios

Cosite Interference Protection

- Filters out RF interference
- Manages/arbitrates frequency conflicts
- Restores lost communications range
- Protects receivers from damage caused by collocated on-channel interference
- Low Pass Filtering provided for one VHF channel
- Band Pass Filtering provided for two L Band channels

Small Size and Weight

- 1100 cubic inches and <28 lbs

More Usable Channels

- Closer spacing allowed between UHF wideband channels
- Small Channel routing

UHF Multiplexer (UMUX)

In addition to reducing the number of antennas required to support command and control missions on the move, UMUX minimizes cosite interference.

The Cosite Interference Problem

- Command and control vehicles and shelters with multiple radios have external antennas in close proximity.
- High level transmitter fundamental signals, noise, spurious, and inter-modulation products couple over to nearby antennas and interfere with sensitive receivers.
- The communication range of a receiver on a command and control vehicle is dramatically reduced as the number of collocated transmitters operating on the command and control vehicle increases.
- The impact on receiver range with as few as four collocated radios can be over 50%.

The UMUX Solution

- UMUX reduces cosite interference by simultaneously “cleaning-up” the transmit spectrum and “protecting” the receiver.
- UMUX “Reactive Combining” incorporates a series of band-pass filters connected to a common antenna node.
- As transmit signals pass through these filters, UMUX removes much of the undesired interference.
- As receive signals pass through these filters, UMUX improves receiver selectivity.



For more information, please contact:

Northrop Grumman Corporation
Electronic Systems
Xetron Campus - Business Development
460 West Crescentville Road
Cincinnati, OH 45246
Telephone: (513) 881-3290
Fax: (513) 881-3543
e-mail: marketing.xetron@ngc.com
website: www.northropgrumman.com

Specifications and features subject to change without notice.

DS-430-VFB-0211
A330: ES20110244
2011 Graphic Arts

