

# SIMULTANEOUS MULTIBAND SOLUTIONS

TEXTRON Systems



Flyaway



Airborne



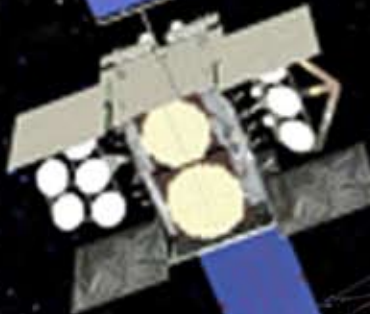
Shipboard



Fixed



Transportable



- Features single feed for combinations of L, S, C, X, Ku, Ka, Q Bands
- Simultaneous operation in multiple bands and multiple polarizations
- Meets DSCS, Intelsat and Eutelsat requirements
- Low Cross Pol, high efficiency, antenna systems
- Various antenna, tracking, redundancy and modem configurations available to meet user specific needs
- Reduces real estate requirements and logistical costs

**Multiband Satcom Antenna Systems  
Using A Single Feed  
For Simultaneous Operation In Multiple Bands**

# MULTIBAND SATCOM ANTENNA SYSTEMS

The multiband feed uses Overwatch's patented approach of broadband, coaxial circular waveguide with independent antenna cavities for each band. These cavities are modular and independent of the other cavities and can be configured in various frequency ranges to provide coverage in diverse frequency bands from Commercial L, S, C, Ku, and Ka-bands, to Military X, Ka, and Q-bands. Some of the possible combinations that Overwatch has developed include C/Ku, X/Ku/Ka, Ku/Ka, and X/Ka bands. The C/X/Ku Tri-band achieved Intelsat certification in G (C-band) and E1 (Ku-band) in 2000. The C/Ku configuration achieved Intelsat certification of H3 (C-band) and E1 (Ku-band) in 2005. X/Ka achieved DSCS certification in 2007.

By combining multiple frequency bands into a single feed system, one antenna can now do the job of many. Reduced real estate, reduced O&M costs, and increased frequency flexibility are but a few of the benefits provided by this technology. Frequency diversity on a single antenna system allows cross-banding where operational and environmental requirements allow.

In addition to multiple frequency bands, independent polarization outputs from the same feed can be configured from each band thus providing an antenna system that is easily adapted to the user's satellite of choice. Satellite systems which support multiple bands can benefit from using a single feed to service multiple signals, simultaneously.

## Features

- Concentric circular waveguide feeds
- Single focal point for each band
- Coincidental phase centers for each band
- Equivalent pattern performance in each band
- Each band has its own autonomous cavity (antenna)
- Inherent isolation between bands
- The intrinsic geometric form provides a design that can be extended up or down in frequency
- Simultaneous operation across multiple bands, independent of band configuration

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