



DSCT

Deployable Satellite Communication Terminal



Summary

- Complete high-bandwidth SATCOM system in 2 airline checkable cases
- Improved link reliability compared to small fly-away terminals
- Increased bandwidth for faster data transmission and better video quality
- Supports first-in communications, contingency operations, and emergency response

The inflatable satellite antenna system delivers portable, high-bandwidth communications for data, voice, and video in remote environments.

The inflatable antenna system offers unprecedented bandwidth for a small package solution by quickly and easily deploying large aperture systems in remote environments. The combination of portability and performance makes the antenna ideal for remote, high-bandwidth satellite communications for use by first-in operators, contingency, and emergency personnel.

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Overview

Today's advancement in technologies demands the transfer of large amounts of data in most any defense situation. Securing such high-bandwidth connections, however, is problematic for first-in communications, contingency operations, and emergency response. The primary reason is that conventional high-bandwidth satellite terminals are limited in portability due to their large, heavy dishes and supporting hardware, while portable, "fly-away" systems are limited in bandwidth due to small dish size.

GATR Technologies has developed the first back-pack portable satellite system capable of high-bandwidth SATCOM for first-in communicators and emergency response. Using ultra-lightweight materials, an inflatable design, and proprietary manufacturing techniques, this patented system dramatically reduces the packaged weight and volume, providing substantial logistical improvement and enhanced operational capabilities, relative to existing technology. These attributes make the inflatable satellite system ideal for first-in communication links, contingency operations, and emergency response communications.

Benefits for Tomorrow's Defense

- Faster insertion of high-bandwidth communications
- Improved link reliability
- Reduced transportation costs
- Rapid contingency / back-up solution

Technical Concept

This program has developed and fielded a deployable communication system that provides a large-aperture satellite communication system packaged in two small cases, reducing logistics costs and improving voice, data, and video communications for forward deployed personnel.

Central to satellite communications is the ability to achieve "gain," or amplification of relatively weak RF energy transmitted to, and received from, a communication satellite in orbit around the Earth. Larger antennas feature

greater gain and are thus able to support higher transmission rates, increasing bandwidth and improving performance in adverse conditions, such as inclement weather or transmission to areas on the margin of a satellite's footprint. In addition, portability is a key factor in areas that do not have adequate infrastructure or when logistical considerations limit deployment of large aperture terminals.

The system's enabling technology is a lightweight, flexible composite reflector, or dish, mounted at the equator of a precision-engineered inflatable radome, which is itself cabled to mounting plates on the ground. When the radome is inflated, greater pressure above the reflector loads the dish, forming a parabolic antenna within the radome. When deflated, the radome and reflector fold into a small, back-pack sized bag weighing less than 18 lbs.

Precision design engineering and materials development are employed to produce a highly accurate and stable parabolic reflector that is easily deployed and performs comparably to conventional systems of similar size. The reflector's unique properties allow it to be repackaged and stored in a cube one-tenth that of its rigid counterpart.

The culmination of these technologies and developments have netted an ideal portable, satellite communication system that minimizes the logistical requirements of deployment while maximizing bandwidth.



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