

# Simultaneous Dual Band Feed for Tactical Satellite Communications



**BAE SYSTEMS**



In the modern battlefield environment the Land Commander requires real-time delivery of intelligence information, as well as the flexibility to simultaneously command his forces.

The Simultaneous Dual Band Feed satellite antenna feed, operating simultaneously in both X and Ka bands, and designed for use with the Wideband Global System satellite constellation, provides that flexibility.

The Wideband Global SATCOM (WGS) satellites and the Australian Defence Force Payload on board the Optus C1 satellite are capable of operating at X-band and Ka-band simultaneously. Current SATCOM terminals deployed in the land environment are only capable of operating in one frequency band at a time and a modification kit is required to operate on a different frequency band. Furthermore, existing simultaneous X/Ka-band feed systems are generally much too big and heavy to be installed on small deployable SATCOM terminals, and these feed systems often compromise performance in both bands, which limits their utility.

BAE Systems has alleviated this problem by developing a very compact antenna feed system that is capable of operating simultaneously in X-band and Ka-band. The Simultaneous Dual Band Feed system weighs just 3 kg, and provides comparable performance, in each band, to existing single band feed systems.

Key benefits:

- Allows essential Command and Control information to be sent over a very reliable X-band link, whilst less time sensitive and broadcast traffic can take advantage of the extra bandwidth offered by Ka-band
- Supports better management of the space segment by minimising the use of congested X-band frequencies
- Does not require modification kits to change bands
- Mitigates electronic attack by allowing operators to move quickly to an alternate band
- Supports the use of the cross banding capabilities of the WGS and Optus C1 satellites

Developed by BAE Systems Australia's team of world leading SATCOM Antenna and Feed design specialists, the Simultaneous Dual Band Feed is an example of our commitment to developing leading-edge technologies that meet the needs of the Australian Defence Force and have significant export potential.

Technical Specifications:

- X-band Transmit: 7.9 to 8.4 GHz
- X-band Receive: 7.25 to 7.75 GHz
- Ka-band Transmit: 30 to 31 GHz
- Ka-band Receive: 20.2 to 21.2 GHz
- X-band Power Handling: 1kW
- Ka-band Power Handling: 400W
- Weight: 5 kg (11 lbs) including diplexers
- Length: 460 mm (18 inches)
- Isolation: > 110 dB Tx to Rx at X-band
- Provides four port X-band (with external diplexer) and optional two or four port Ka-band antenna feed system
- Suitable for Single Offset or Compact Cassegrain antennas

#### FOR MORE INFORMATION CONTACT:

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