

# Cobham Antenna Systems Microwave Antennas

# COBHAM

Antennas for Tactical Communications  
Link16, MIDS, JTRS, JTIDS

The most important thing we build is trust



High specification



Critical communications



Omni coverage



NATO



# Tactical Communications

## Link16, MIDS, JTRS, JTIDS

Blade, Omni, Directional and Sector Antennas

Omni antenna  
XVO4-960 -1215/1425  
Link16 system



The Link16 protocol uses bands that cover 960-1215MHz. This range of extended performance, broadband omni antennas has been designed for use in Link16 systems for terrestrial and naval applications communicating with airborne platforms

For short range applications a broadband dipole, model EVD2-960-1215/004 that has nominal 0dBi gain and moderate power can be used.

Model XPO2V-500-1300/034 is a high power, 2dBi gain omni, that has been used for marine applications by the UK Navy.

The product catalogue includes a 4dBi gain omni for 'intermediate' range. Size and elevation beamwidth enable model XVO4-960-1215/1425 to be used for marine and ground applications.

All Link16 antennas are rugged, designed for extremes of weather and temperature, and have been tested in battle conditions without affecting the performance or inhibiting mission requirements.



### Bandstop Filter

A high power (200W) band pass filter provides 35dB notches at the IFF frequencies 1030MHz and 1090MHz and band stop above 2GHz for protection against harmonics. The filter reduces mutual interference where IFF and Link16 equipment is co-sited. The unit can be mounted externally although it can afford greater protection when located close to the Link16 radio.



BSF-1030-1090/1347



### Antenna Summary

Broadband dipole for 20W transmitters and short range.

Broadband extended performance omni for 200W transmitters, fixed, marine and mobile

Broadband extended performance omni for 200W transmitters, fixed, marine and mobile

Broadband extended performance omni, initially for deployment on Arctic ice breakers

Broadband extended performance omni for high power 200W transmitters, fixed ground

Description	Dipole	Single element	Dual element	Quad element	Quad element
Model	EVD2-960-1215/004	XPO2V-500-1300/034	XVO4-960-1215/1425	OA7-1090V/1328	XV07-960-1215/1120
Gain dBi	0	2	4	7	7
HPBW Elevation*	80	50	33	17	17
Power handling (mean) W	20	200	200	200	200
Dimensions inch	11x10	13x30	24x30	41x50	40x30
mm	281x250	333x790	620x790	1040x1220	1029x790
Connector	N(F)	N(F)	N(F)	N(F)	N(F)
Application	Hand held radio/ Vehicle	Vehicle/Fixed ground/ Marine	Vehicle/Fixed ground/ Marine	Ice breaking/ Marine	Fixed ground
NATO Stock No		5985-99-5737366			5985-99-7586585

Omni antenna  
XVO7-960-1215/1120  
in Link16 system  
installation



Omni antenna  
OA7-1090V/1328  
used in Link16 system on  
Arctic ice breaker



## High Gain Link16 Antenna XVO7-960-1215/1120

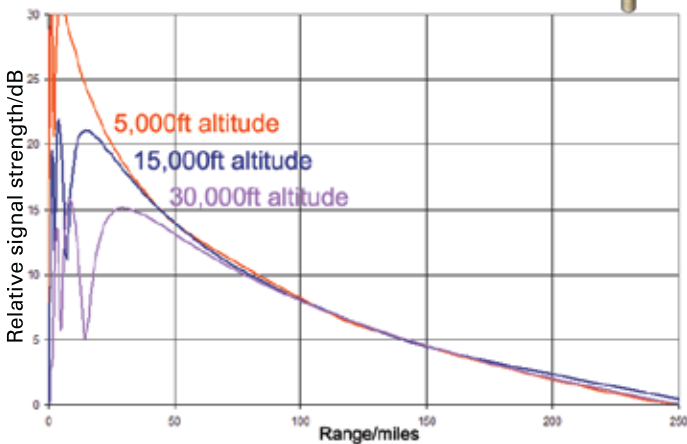
NATO Stock Number: 5985-99-7586585

With the bandwidth of the system and limited transmit power from the aircraft, longer ranges are achieved by providing higher gain on the ground for receive bands.

The 7dBi gain omni has achieved reception from aircraft at 250 miles (400km) range.

### Fly-by Analysis Pattern

Omni antenna XVO7-960-1215/1120 has 17° elevation beamwidth. Detailed analysis has demonstrated that the aircraft will receive stronger signals the closer it gets to the ground antenna, irrespective of aircraft height or elevation angle. This is illustrated showing relative signal strength at the aircraft flying at different altitudes and from 250 miles range to overhead.

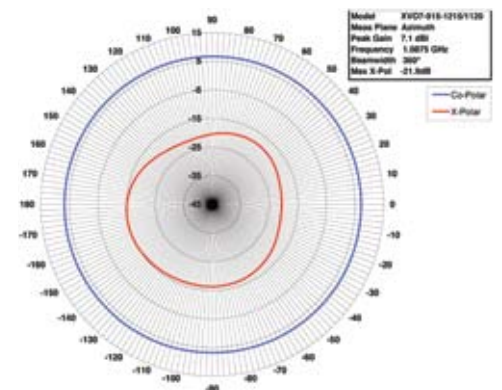


This antenna can be incorporated into MIDS, JTRS and JTIDS systems for high data rate transmission.

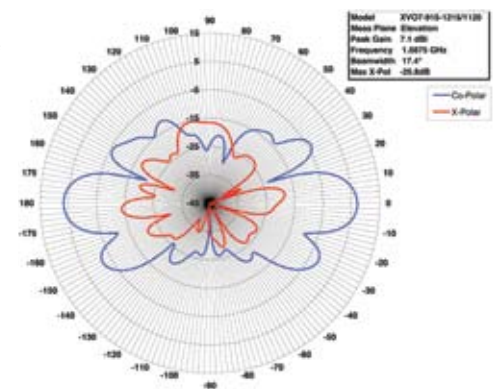
The antenna weighs 5.5lbs (2.5kgs) and has a base spigot for mounting to standard 1 inch pole mount clamps, although other configurations are possible.



Radiation Pattern - Azimuth. At the centre frequency of 1.087GHz, this pattern shows less than 1dB ripple and excellent cross-polar performance



Radiation Pattern - Elevation. At the centre frequency of 1.087GHz, this pattern shows 1.5° electrical up-tilt and 17° elevation beamwidth



### Product Enhancements

Additional capabilities that are available across Link16 products include

- Lightning diverter or protection
- Integrated GPS antenna
- Feed through for additional omni on top providing high isolation
- Sector antennas to create pseudo-omni pattern

## Other antenna brochures



Commercial -  
Vector and LTE



Defence -  
Unmanned Systems



Defence and Security



Commercial and  
Satellite



Antenna Catalogue

## Link 16

Link 16 is a military inter-computer data exchange format of NATO enabling military aircraft, ships, Army and Marine Corps units to exchange their tactical picture in near real time. Link 16 is defined as one of the digital services of the MIDS in the Standardization Agreement STANAG 5516. It is a TDMA-based secure, jam-resistant high-speed digital data link that operates over-the-air in the L-band portion (969–1206 MHz) of the UHF spectrum.

## MIDS

Multifunctional Information Distribution System (MIDS) is the NATO name for the communication component of Link-16. Another such terminal is the MIDS-JTRS (MIDS Joint Tactical Radio System). An older MIDS is the JTIDS (Joint Tactical Information Distribution System).

## JTIDS

The Joint Tactical Information Distribution System (JTIDS) is the L-band TDMA network radio system used by the US armed forces and their allies to support data communications.

## JTRS

The Joint Tactical Radio System (JTRS, often pronounced “jitters”) is the next-generation software-defined radio for voice and data that will be backward-compatible with other military and civilian radio systems.

## STANAG

STANAG is the NATO abbreviation for Standardization Agreement, which sets up processes, procedures, terms and conditions for common military or technical procedures or equipment between the member countries of the alliance.

## Cobham Antenna Systems, Microwave Antennas

M: Cobham Antenna Systems, Microwave Antennas  
Lambda House, Cheveley, Newmarket, Suffolk CB8 9RG, UK  
T: +44 (0)1638 732177  
F: +44 (0)1638 731999  
E: [antennasystems.ma@cobham.com](mailto:antennasystems.ma@cobham.com)

European Antennas Limited trading as Cobham Antenna Systems, Microwave Antennas

Link16 Antennas Issue 2, 2009-08

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