

CHELTON

# Link 16 solutions from the antenna specialists

Building the resilience of your tactical network



[chelton.com](http://chelton.com)

| Increased situational awareness

| Jam resistant

| Increased data throughput

| Relative navigation capability

| Precise participant location and identification



# Operating at the tactical edge

Credited by the US Air Force as a key factor for saving lives in multiple theatres due to increased situational awareness, Link 16 is a military inter-computer data exchange format enabling military aircraft, ships, Army and Marine Corps units to exchange tactical information securely and in near real time.

Communication and situational awareness is key in the battlefield and can be the difference between mission success and mission failure. By networking together air, ground and maritime nodes into a Common Operating Picture (COP), Link 16 provides warfighters with enhanced command and a full, holistic situational awareness of the battlespace they are in.

Successful data links from Link 16 enable warfighters to understand location and identity of friend or foes, share points of interest over a secure network and optimise the decision-making process in an electromagnetically stressed environment.



Link 16 can be incorporated into the following systems:

## MIDS

Multifunctional Information Distribution System

## JTIDS

Joint Tactical Information Distribution System

## JTRS

Joint Tactical Radio System

## TTNT

Tactical Targeting Network Technology

## TCTS

Tactical Combat Training System

# Survival in the digital battlefield

In the heat of battle, an already stressed environment can be exacerbated by poor communication and planning which may lead to friendly fire, fratricide or other cases of mistaken identity.

Situational awareness is imperative. Commanders and warfighters need to know friendly and enemy locations as well as the location of aircraft, ground support or naval support that can enhance knowledge of the situation. But locations change dynamically in combat, so having real-time situational awareness is a clear advantage.

Communication between troops is also key. Your air-to-air communications may be secure but what if your troops on the ground had no way to communicate with air support? What if they had to rely on radios with delayed relay?

To avoid these problems, Link 16 was created. To ensure warfighters all had real-time awareness of the situation with the ability to communicate with each other.





Ground



Marine



Air

# Link 16 Antennas

The Link 16 protocol uses frequency bands that cover 960-1215MHz and all antennas in this range are rugged, designed for extreme weather and temperature and have been used in battlefield conditions without affecting the performance or inhibiting mission requirements.

Link 16 systems can be incorporated into MIDS, JTRS and JTIDS systems for high data rate transmission where multiple bands will be in use.

Chelton offer the following in our Link 16 suite:

- ✓ Omni Antennas for Ground, Vehicle and Marine applications
- ✓ Sector Antennas
- ✓ Blade Antennas
- ✓ Bandpass and Bandstop Filters
- ✓ Accessories including mast deployment kits, bespoke vehicle mounts, bags and cases.

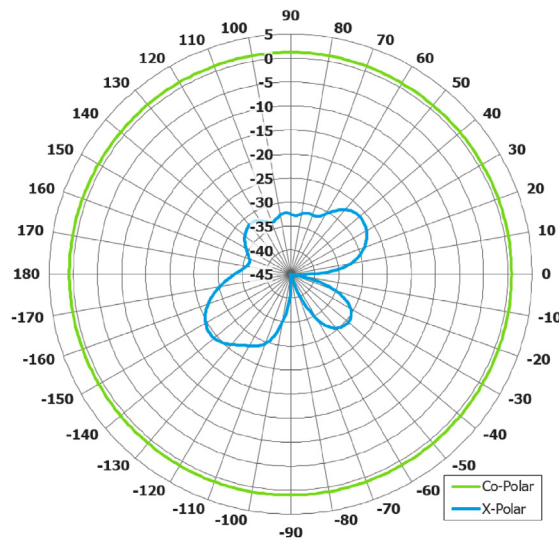


# Link 16 Antenna Form Factors

## Omni Antennas

Omni directional antennas transmit and receive uniform signals in a 360° pattern. The circular polarisation optimises performance particularly in ground to airborne applications.

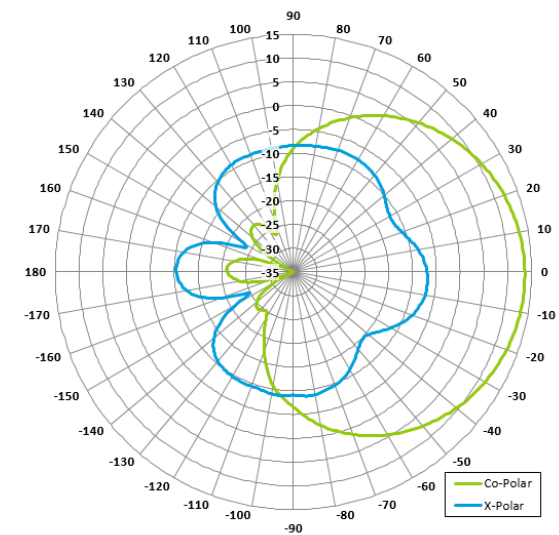
- ✓ Easy to install
- ✓ Various mounting options
- ✓ Various form factors available
- ✓ Delivers long communication distances



## Sector Antennas

Sector antennas are normally used as part of a base station and has a narrow elevation with a clearly defined azimuth coverage.

- ✓ Low profile
- ✓ Azimuth coverage from 30° to 210°
- ✓ Various mounting options
- ✓ High gain
- ✓ High power



# What can Chelton offer?

As the antenna specialists, we provide a proven Link 16 catalogue offering a tailored solutions for your requirement

## 1. Centre of excellence for design and manufacture

Chelton has a dedicated facility designed to manufacture both high value commercial antennas as well as specialist facilities for military and security products.

## 2. Bespoke design

We provide comprehensive antenna design and development for new antennas and can make small adjustments to existing antennas to ensure it meets your specific requirements.

## 3. Tested to destruction

Chelton's spherical near-field test facility operates between 0.8 and 26GHz enabling us to provide radiation pattern and gain data to verify antenna specifications and performance.

### Antennas for defence, security, satellite and commercial

Security	Covert, tracking, Listening Device Detection
Cellular	DAS, Multiband
PMR & TETRA	Omni, Wideband
Tactical Comms	Link 16, Point to Point, Point to Multipoint, Manpacks
Broadcast	High Frequency, COFDM
Electronic Warfare	Counter-IED, Wideband spiral, Wideband Omni, Direction Finding
Satellite	Ground Based, Mobile SATCOM
Unmanned Systems	Data links, Control lins, Robotics
Radar	Portable & Fixed, Stripline & Waveguide, FMCW & Pulse, Reflectometer
WLAN	Directional, Omni, Dual Band, Aesthetic
Missile	Conformal Antennas, Fuse Programming, Telemetry, Command & Control, Override & Abort
Surveillance	Video, Cellular Monitoring & Intercept, COFDM



# Where you can find Chelton

In partnership with Jenkins Engineering Defence Systems and BAE Systems Australia, Chelton developed a new sector antenna for the ship-borne, ship-to-air NATO Link 16 data-link systems for the Royal Australian Navy.

Over a 5 year period, Chelton supplied close to 50 NATO sites with our Link16 antennas to extend NATO's Tactical Data Link footprint for a particular ground to air project.



Scan the QR code for the full case study

# Link 16 Catalogue

Reference	Frequency	Gain	Beamwidth		Polarisation	Power	Dimensions	
	GHz	dBi	AZ°	EI°		W	mm	inches
<b>Omni Antennas</b>								
OA2-0.5-1.3V/1989	0.50 - 1.30	1 to 2	360	80	Vertical	200w at 50% duty	334x130 Ø	13x5 Ø
XPO3V-500-1300/034	0.50 - 1.30	1 to 2	360	80	Vertical	200w at 50% duty	333x108 Ø	13x4.2 Ø
EVD2-960-1215/628	0.96 - 1.215	2	360	80	Vertical	20	292x25 Ø	11.5x1 Ø
EVD2-960-1215/004	0.96 - 1.215	2	360	80	Vertical	20	281x26 Ø	11x1 Ø
OA2-0.96-1.22V/1990	0.96 - 1.215	4.5	360	33	Vertical	200w at 50% duty	603x130 Ø	23.7x5 Ø
OA7-1090V/1328	0.96 - 1.215	7	360	16	Vertical	200w at 50% duty	1040x180 Ø	41x7 Ø
XVO7-960-1215/1120	0.96 - 1.215	7	360	16	Vertical	200w at 50% duty	1029x79 Ø	40.5x3 Ø
XPO4-960-1215/1425	0.96 - 1.215	4.5	360	33	Vertical	200w at 50% duty	620x79 Ø	24.4x3 Ø
XVO7-960-1215/2374	0.96 - 1.215	6.5	360	18	Vertical	200w at 50% duty	1039x140 Ø	40.9x5.5 Ø
XVO7-960-1215/2486	0.96 - 1.215	6.5	360	18	Vertical	200w at 50% duty	1029x79.4 Ø	40.5x3.1 Ø
<b>Sector Antennas</b>								
SA9-180-0.96-1.22V/1814	0.96 - 1.215	9	180	20	Vertical	200w at 50% duty	1055x247 Ø	41.5x10 Ø
SA13-120-0.96-1.22V/1694	0.96 - 1.22	13	110	9	Vertical	200w at 50% duty	1650x155 Ø	65x6 Ø
SA5-120-0.96-1.22V/1969	0.96 - 1.22	5	120	60	Vertical	200w at 50% duty	330x162 Ø	13x6.4 Ø
<b>Blade Antennas</b>								
OA2-960-1215/2640	0.96 - 1.215	3	360	60	Vertical	20	85x77x38	3.3x3x1.5
<b>Filters</b>								
Band Pass Filter: BPF-0.96-1.22/1911	0.962 - 1.213						175x75x25	7x3x1
Band Stop Filter: BSF-1030-1090/1347	Notches at 1.030GHz and 1.090GHz						210x100x85	8x4x3

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