

Antenna Testing



DEFENCE
Man-Pack
IED
UWB



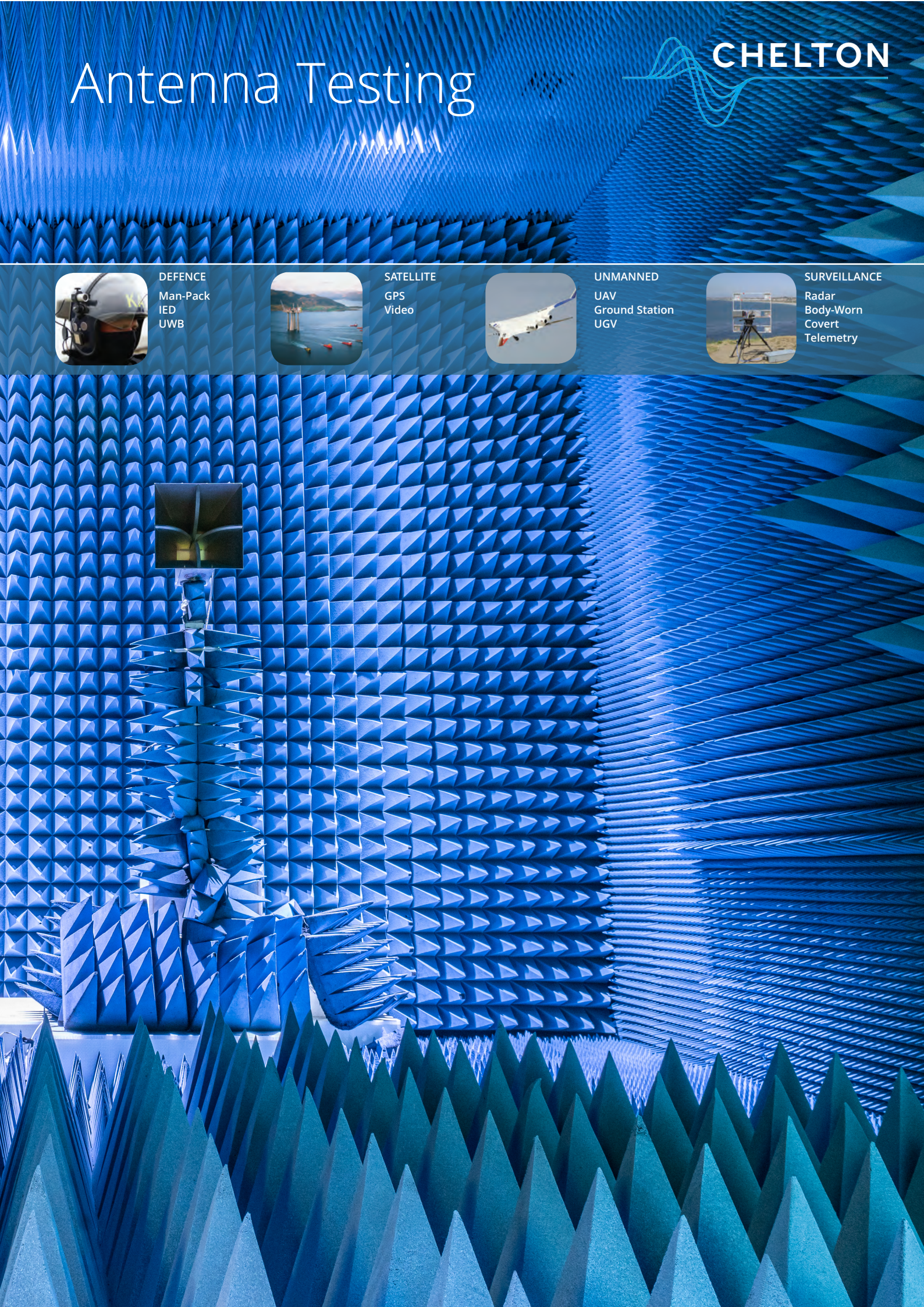
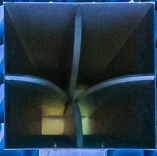
SATELLITE
GPS
Video



UNMANNED
UAV
Ground Station
UGV



SURVEILLANCE
Radar
Body-Worn
Covert
Telemetry



Engineering, Technology and Test

Antennas in production



Chelton Limited - specialists in the design and manufacture of microwave antennas for Defence, Security, Satellite and Commercial systems, worldwide.

We constantly develop antennas for new and emerging markets and applications.

We have more than 2000 antenna designs available, directional flat panel, sector, omni, hemi omni and ultra wideband antennas, that are supplied direct to customers.

All antennas are tested throughout development to ensure they meet quoted specifications and comply with relevant legislation.

Environmental testing can be carried out to recognised standards.

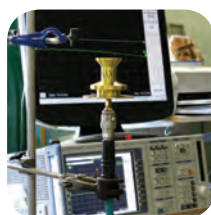
Applications include WLAN, Link16, Surveillance, Telemetry, Electronic News Gathering, WiMAX, Common Data Links and Radar in locations as diverse as unmanned airborne vehicles, helicopters, aircraft, missiles, race cars, railway systems, TV cameras, weather buoys and satellites.

The company's production, development and testing facilities are based in one UK location for fast transition from design to production.

Our antennas are supplied to some of the largest organisations and companies worldwide, with over 60% exported.



Antennas under test



Antenna Development Projects

We undertake antenna development projects. To find out more please telephone or email direct to: newmarket.sales@chelton.com

For assistance in selecting your antenna from our existing catalogue please email direct to: newmarket.sales@chelton.com

Information on existing antenna designs is available on our website:

Antennas:
www.european-antennas.co.uk

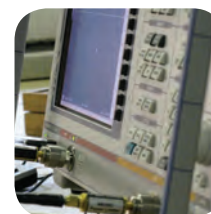
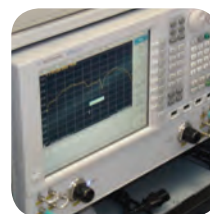
Chelton:
www.chelton.com/our-capabilities/land/microwave-antennas/

Our Antenna Catalogue and other literature is available in PDF format and can be downloaded from the above. Printed copies are available on request.

- Our reputation is based on our customer focused antenna design and development, supplying high performance antennas from 100MHz to 40GHz
- Proven expertise in all aspects of RF performance
- More than 2000 existing antenna designs
- Appropriate mechanical design to meet the specified environment
- Approved supplier to international defence organisations
- Mil standard qualification available
- ISO9001, 14001 & 18001 certification

Engineering

Combining comprehensive knowledge and experience with the latest software design tools, the engineering team design antennas with optimised RF performance to meet our customer's specific requirements.



Antennas under test

Engineering, Technology and Test

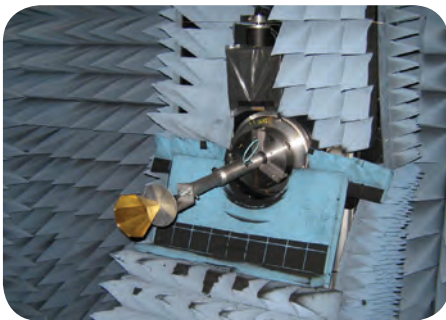


Antennas in production

Spherical Near-field Test Range

Measurement Capabilities

Frequency Range	0.4 to 26 GHz
Max Antenna Dimension	1.5m
Max Antenna Mass Max	50 kg
Antenna Directivity	40dBi
Measurement Method	Multi-frequency spherical near-field
Measurement Platform	PNA-X network analyser Depending on antenna specification and frequency
Measurement Time	
Antenna under test	



The on-site spherical near-field test facility is an example of our commitment to enhancing development facilities and technical support service to customers.

This facility provides radiation pattern data to verify specifications and to ensure compliance with stringent radiation pattern envelopes where necessary. The far field radiation pattern of the antenna can be calculated in any direction, in any polarisation, circular or linear, at any angle.

Operating within 0.4GHz to 26GHz, it has full dynamic range performance down to 0.8GHz, and sufficient sensitivity to test antennas in the lower frequency range.

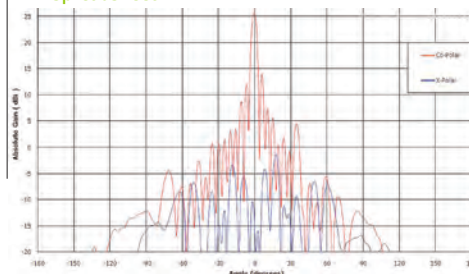
Testing times depend on antenna size in wavelengths and the number of measurement frequencies. Gain measurements can be provided as well as directivity.

Data Extraction Capabilities

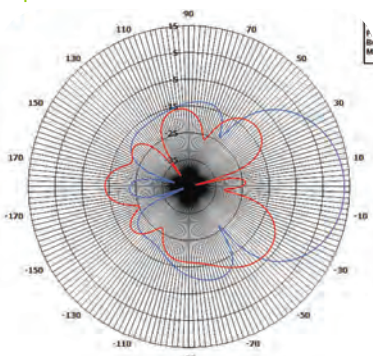
- Far-field gain over full 3D surface
- Far-field axial ratio over full 3D surface
- Far-field phase over full 3D surface
- Performance data in Cartesian or polar formats
- Text files of performance over full 3D surface
- Holographic back projection to antenna surface
- Near-field raw data

An additional benefit of the spherical near field test facility is the ability to perform back projections on to a given plane within the measurement sphere. A holographic back projection on to the aperture of the antenna highlights material defects that might affect antenna performance, and enables them to be resolved at the design stage. It is possible to determine the affects of coupling within a circuit that may cause amplitude, phase corruption within an array or if there is unwanted radiation off the feed circuit.

X-Y Spreadsheet



Polar Spreadsheet

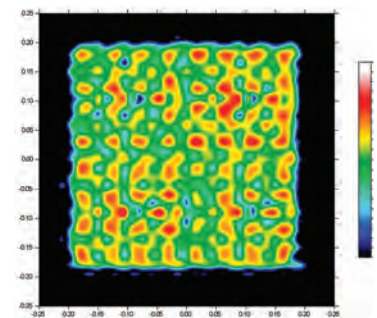


Environmental Testing Capabilities

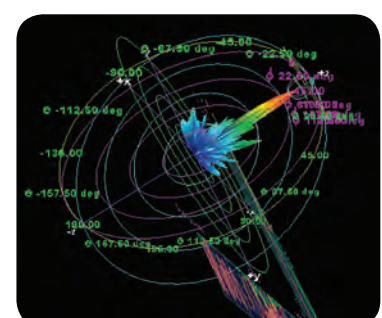
- Vibration
- Shock - gravity
- Bounce
- Bench handling - impact
- Life testing
- Centrifugal
- Seismic
- Temperature
- Humidity
- Altitude
- Ingress
- Sand and dust
- Salt corrosion
- Susceptibility to fluids
- Sunlight



Hologram Amplitude of 1688-03.NSI, an X-band 8x8 element array



3D image of antenna far field radiation pattern



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www.chelton.com/microwave