



# Antennas for EW Systems

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# Applications

**Radio Astronomy**



**Satellite Communications**



**Earth/Space  
Observation**



**LEO/MEO  
Satcom**

**High Energy  
Physics**



**Radar - Electronic  
Warfare**



**Deep Space  
Communications**










**Maritime  
Communications**



# Major Projects

## Customers include:

-  The USNO
-  Canadian DND
-  Ultra Electronics
-  NASA, several sites
-  SRI International
-  Most of the larger US defense contractors
-  Most of the nuclear physics research centers in the USA





# **Antenna Product Highlights**



# Precision Antennas

**2.1m Antenna**



**12m Antenna**













# Precision Antennas

Design and manufacture our own full range of single or multiple aperture precision antenna systems from 2m to 12m.

## Typical 12m system specifications

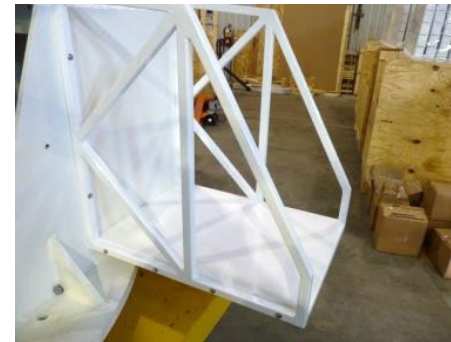
-  Surface accuracy: 0.008" RMS or 0.2 mm RMS
-  AZ:  $\pm 270^\circ$       EL: 0-90°
-  Slewing: AZ 12°/s EL: 6°/s
-  High stability of reference point making it ideal for arrays, 0.012" or 0.30mm all causes
-  High efficiency cassegrain optics suitable for use beyond 40GHz
-  Wind speed sustained resistance up to 200 km/h
-  Fully compliant with VGOS/VLBI 2010 spec
-  2 storey air-conditioned equipment room space in the pedestal





# Precision Antennas

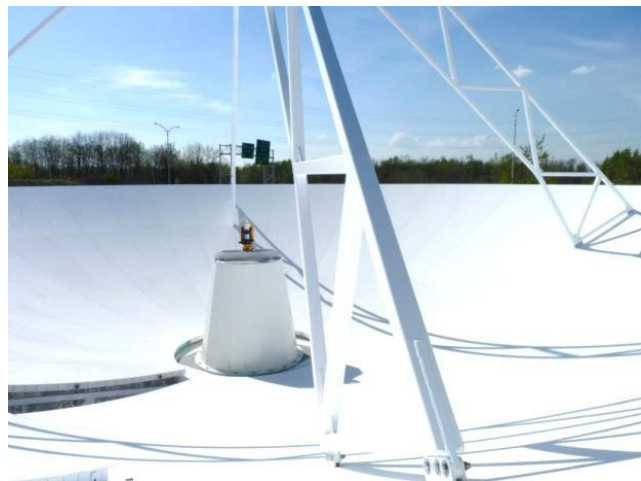
## Typical major components





# Precision Antennas

## Precision large aperture reflectors







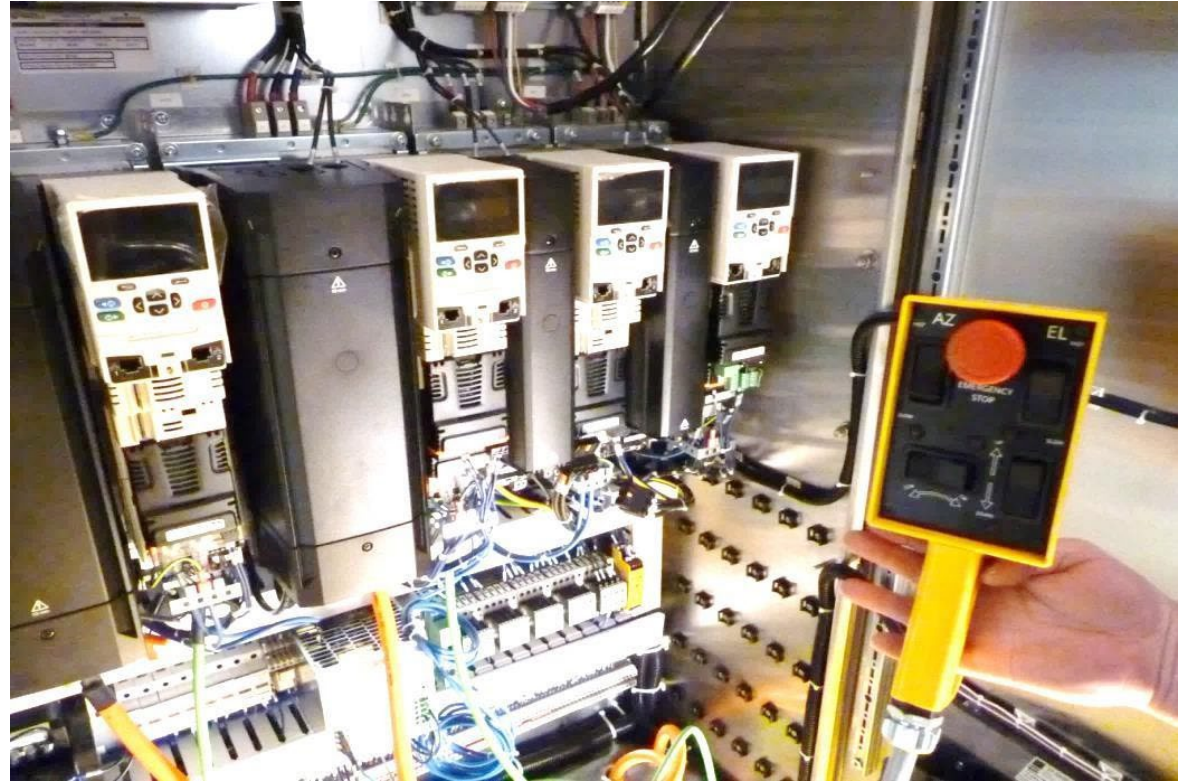
## 12m Antenna Details





# Antenna Details

## COTS motors and drives





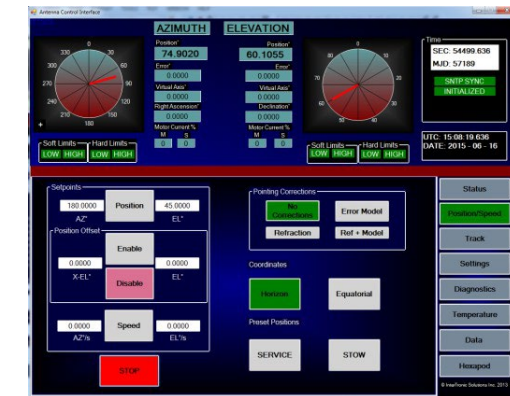
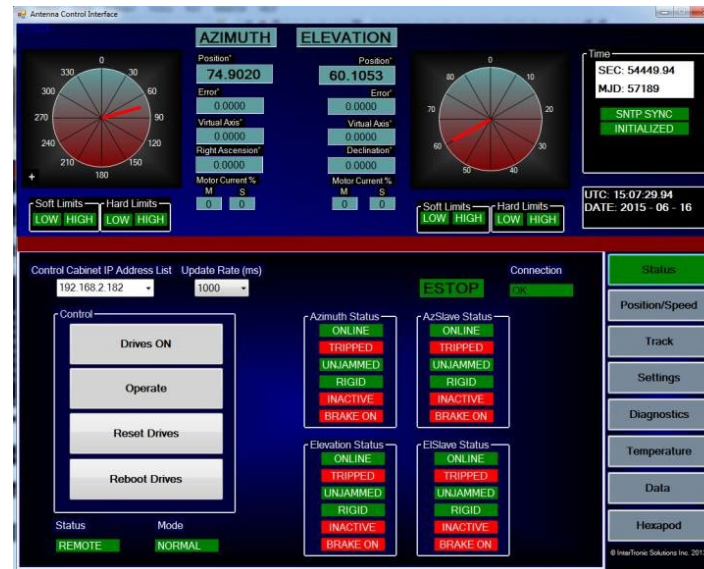
# Antenna Details

## Operation using our advanced ACI

Our antennas can be fully customer controlled using our Antenna Control Interface program or many customers write their own interface to send tracking commands.

Can interface with Day/Night cameras.

Can optically track moving targets.







# 2-3m Precision Antenna



## Description

- ▣ Designed to operate from L-band up to Ka-band
- ▣ Offers very accurate reflector surfaces, precision pointing
- ▣ Extremely rigid pedestal also for use in high wind locations

## Features

- ▣ Durable Construction:
  - Formed aluminum reflector
  - Galvanized steel structure and hub
  - Stainless steel fittings
- ▣ Wide range of feeds for EW applications
- ▣ Full Ethernet interface control system
- ▣ Easy worldwide shipping, assembly and commissioning





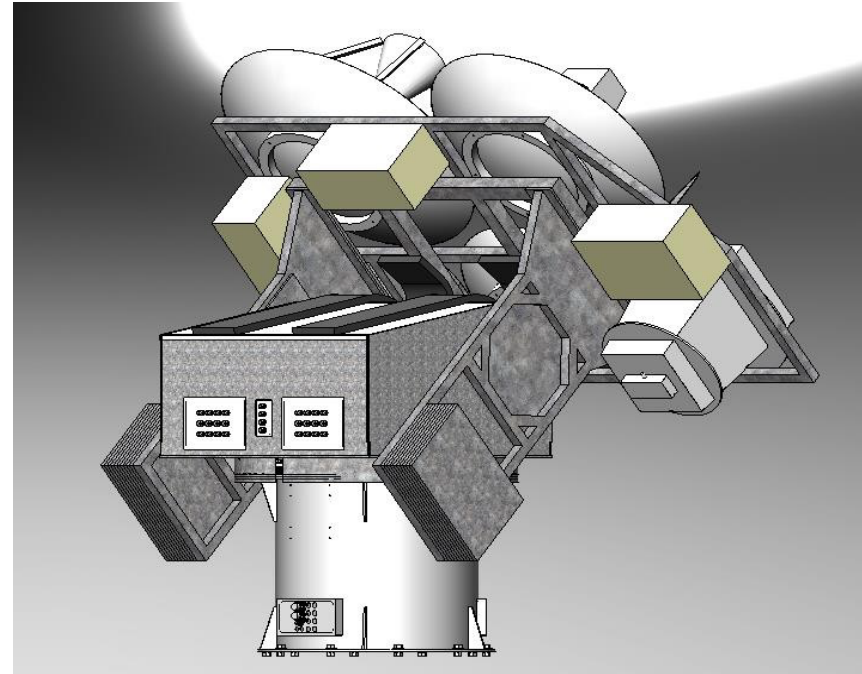
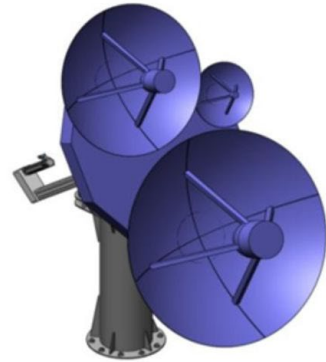
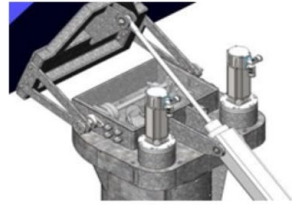
## 2-3m Precision Antenna





# EW Antennas

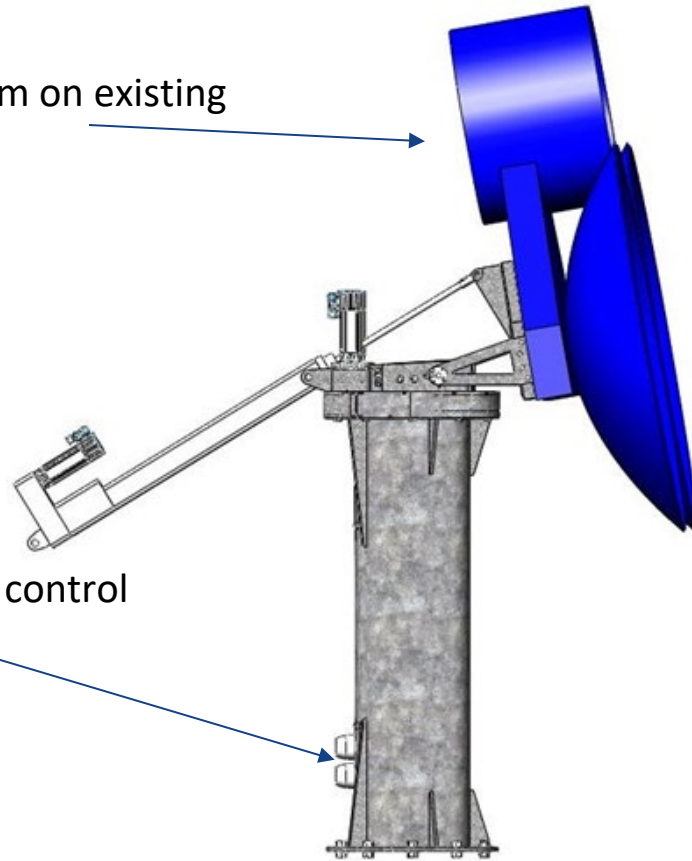
Various pedestal designs are available to suit a wide variety of existing or new antenna apertures. Pedestals can be slower or high speed and can be ship stabilized and/or optically tracked.





## Example new pedestal under old antenna subsystem

Existing antenna farm on existing frame



New pedestal and control system

A new control system based on our existing design, this is typically mounted inside an enclosure, although version shown below is externally mounted.



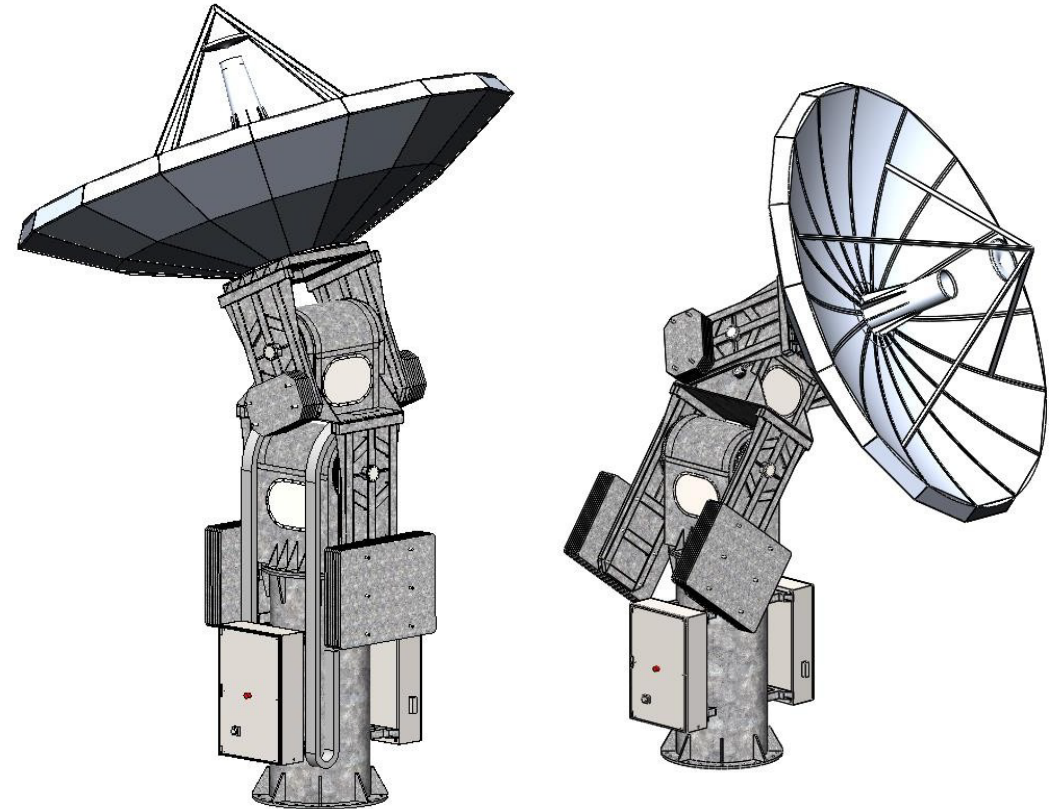


# High Speed Motion Antennas

## 4.5m fast tracking system, single or multiple apertures

### Features:

- ❑ X/Y pedestal design for no Zenith keyhole - puts 90 and 270 Az Deg keyholes below 2 Degrees elevation
- ❑ Very fast motion and accelerations for rapid transit to new satellite pass or target. Up to 30 deg/sec slewing
- ❑ Simpler lower cost mechanical system than a 3 axis Az/EL/Tilt system
- ❑ No complex cable wraps or slip rings

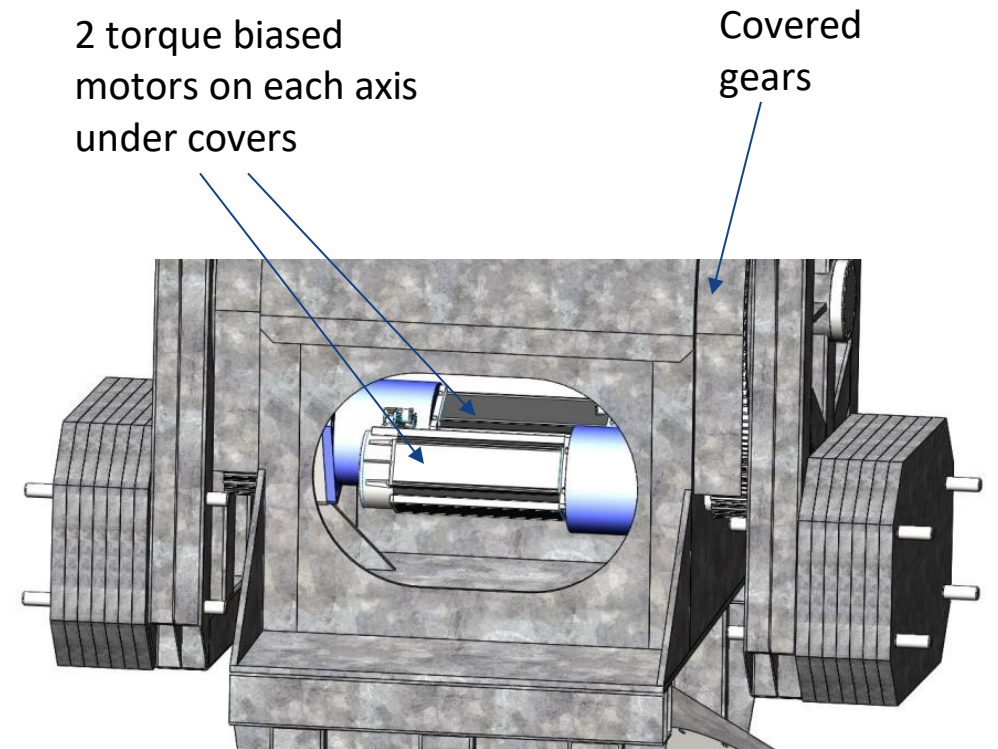
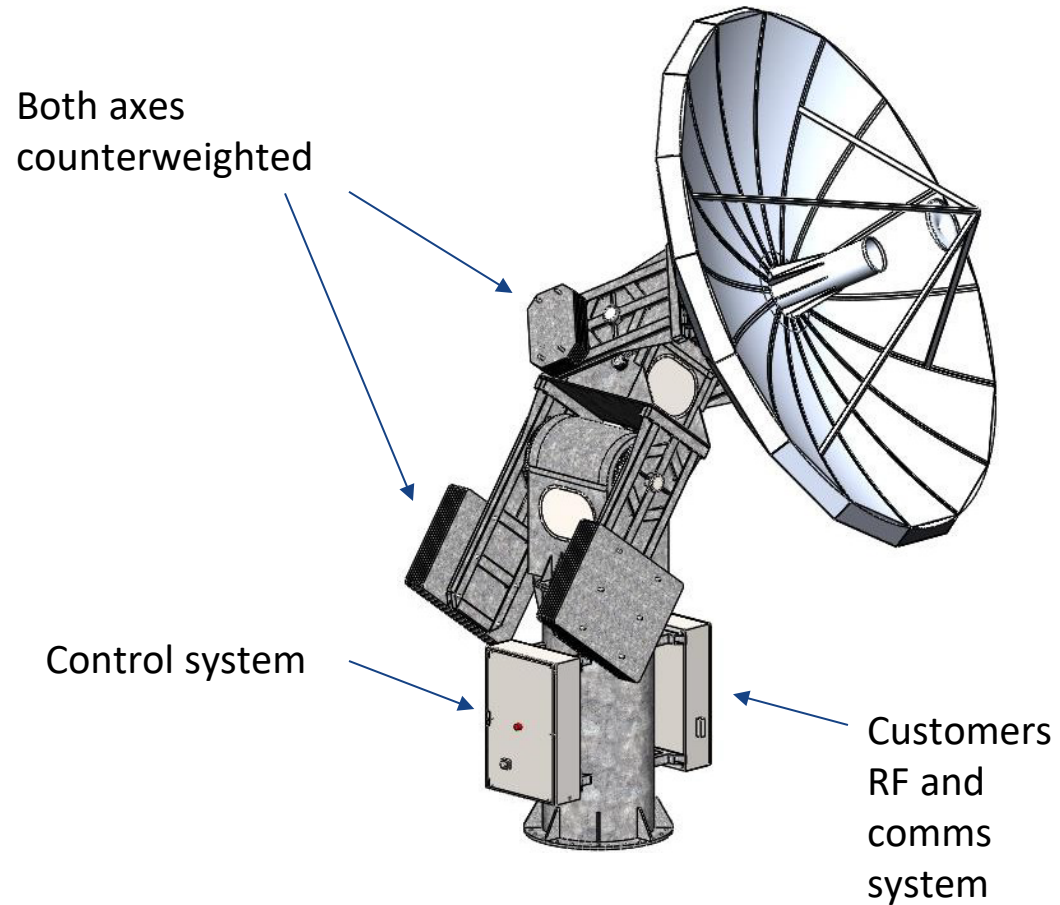






# High Speed Motion Antennas

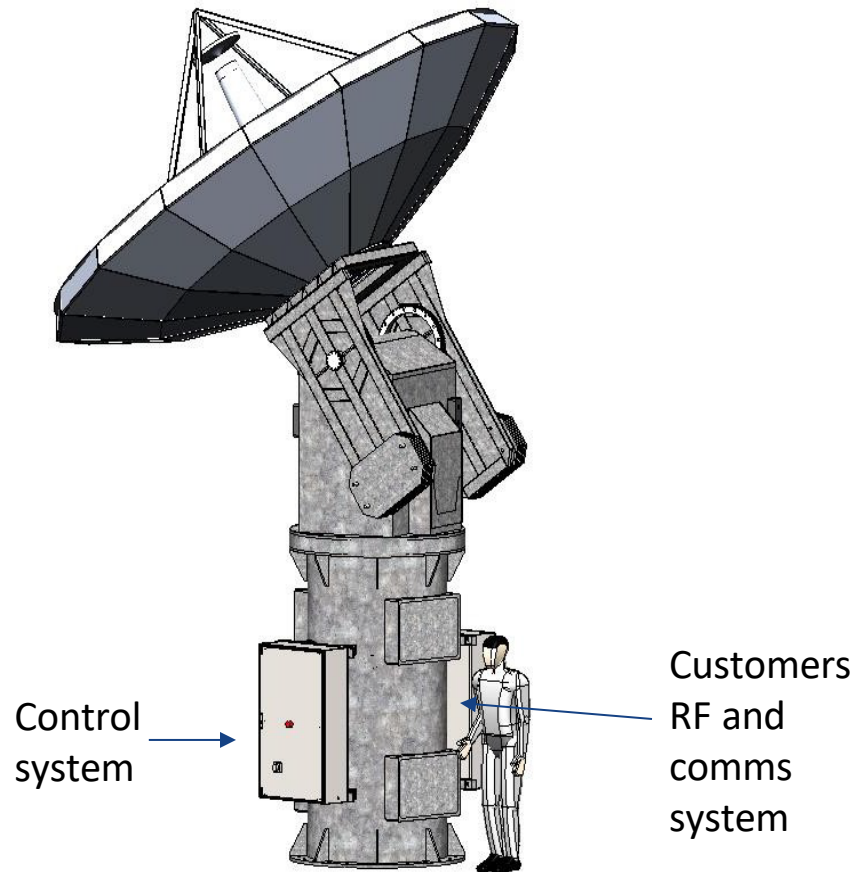
Design features of X/Y 4.5m fast tracking system, shown with single aperture



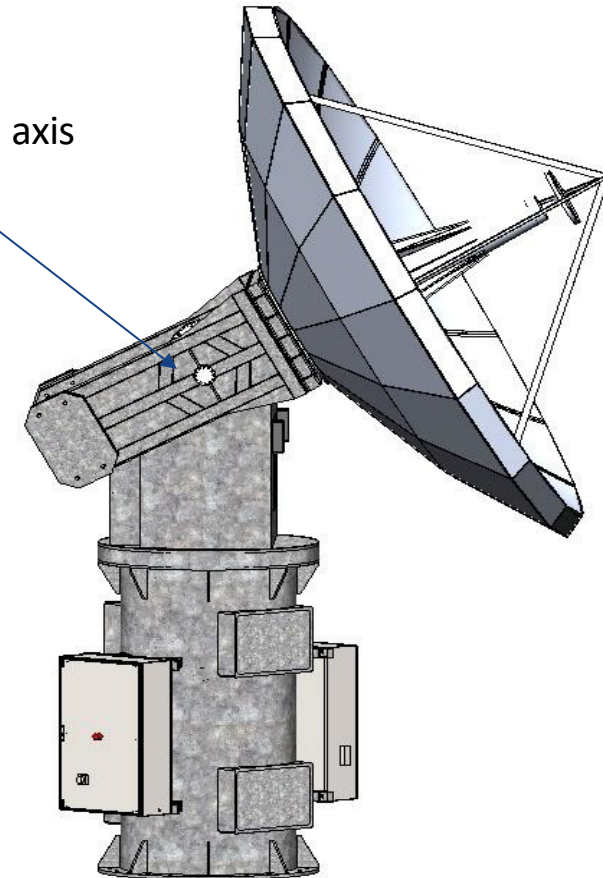


# High Speed Motion Antennas

Also available in AZ/El configuration with 4.5m fast tracking system



2 torque biased motors on each axis under covers

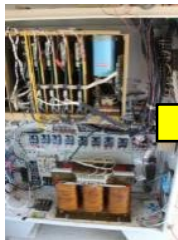




# Antennas Services

## Older antenna upgrades and moves

2X



2X



3X

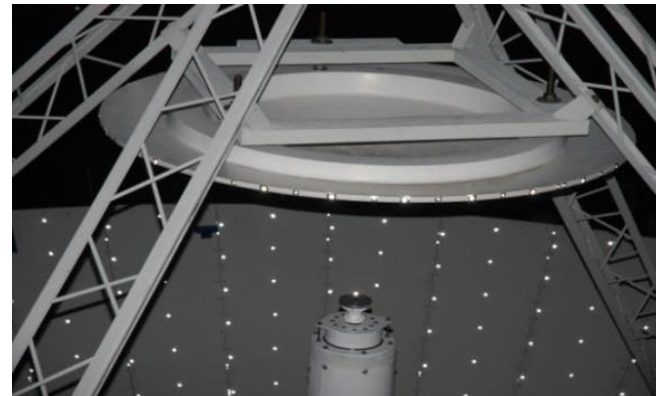






# Antennas Services

## Older antenna upgrades and moves







# Antennas Services

## Antenna control system upgrades





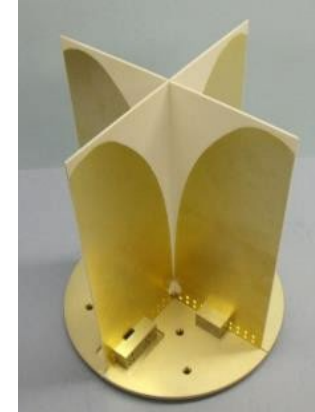
# Wideband Horns and Feeds



**0.8 – 40GHz UWB Omni**



**IED/Mine detection Vivaldi antenna**



**Low frequency single and dual polarised  
ridged broadband horns**





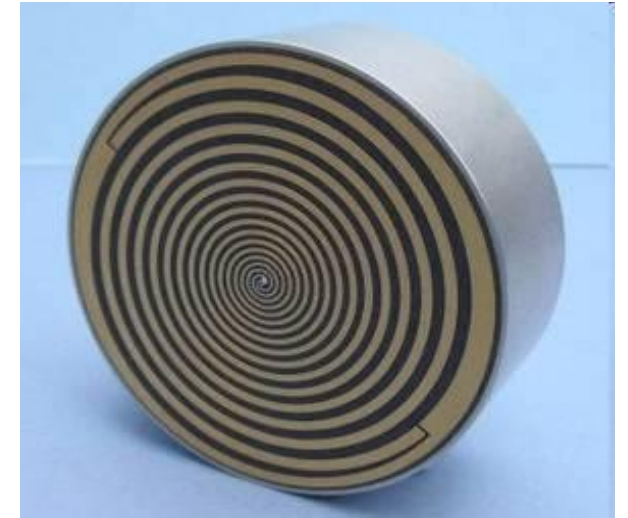
# Sinuuous and Spiral Feeds



0.2 – 2GHz Dual CP or LP



2 – 18GHz LHCP and RHCP



18 – 42GHz CP






## Contact Details


Peter Keller, VP Sales & Marketing

**QPAR USA**, a  **Steatite** company

10910 Talbert Avenue

Fountain Valley, CA 92708, USA

 (+1) 702-208-9973

 (+1) 619.218.1898

 [peter@qparusa.com](mailto:peter@qparusa.com)

 [www.qparusa.com](http://www.qparusa.com)