

# InterTronic Antennas

Creating solutions in communications and science

## 12 Metre High Performance Antenna Systems



The InterTronic 12m antennas provide high accuracy, high efficiency Cassegrain optics and high speed slewing systems. The use of advanced manufacturing techniques results in a major step forward in affordable precision antenna and telescope systems design. They offer exceptional pointing precision and reflector surface accuracy, making them ideal for advanced VLBI, Radar, Scientific and other array applications.

## Specifications

### Mechanical:

Travel	Azimuth $\pm 270^\circ$ , Elevation 0-90°
Slew rate	12°/sec in azimuth, 6°/sec in elevation
Acceleration rate	3°/sec <sup>2</sup> both axes
Pointing accuracy	0.005°
Drives	Torque biased motors and gearboxes on both axes

### Optical:

Configuration	Dual shaped Cassegrain
Main reflector	12m diameter with precision formed adjustable aluminum reflector panels
Surface accuracy	Better than 0.008" RMS
Feeds	Suits a wide range including: <ul style="list-style-type: none"><li>◦ Customer supplied or Callisto cryogenic feeds</li><li>◦ Any wideband feeds with 50° opening angle and 20dB edge taper</li><li>◦ Any satellite communications feed up to and including Ka Band</li></ul>
Reference point	At intersection of axes, stable to 0.012 after modelling of thermal and mechanical errors

### Control:

Hardware	COTS based, RFI screened and housed in antenna pedestal Built in position and velocity control loops 0.0001° resolution Ethernet interface (optical or cable)
Software	RA/Dec or Az/EI inputs with comprehensive control and monitoring of all antenna functions 4msec update rate.

### Electrical supply:

Antenna drive	408V 3 phase
Auxilliary circuits	208V 3 phase

### Environment:

Temperature range	Operational -15 to +50°C, Survival -30 to +60°C
Windspeed	40 km/hr full spec, 80km/hr operational, 200 km/hr survival when stowed.
Humidity	0-100% with condensation
Ice accumulation	30mm thick on all exposed surfaces
Seismic	0.3g horizontal and vertical
Corrosion	All surfaces protected by galvanizing and/or paint. Stainless steel fasteners.

## Commissioning Features:

- Shipping of whole system in 3 standard 40ft shipping containers for easy transport to installation site
- Built-in cable wrap systems with additional space for customer's cables
- Foundation drawing and bolt ring kit supplied before antenna to enable foundation installation
- Experienced crews for assembly and commissioning at your site