

VT-012™ Auto-tracking Antenna

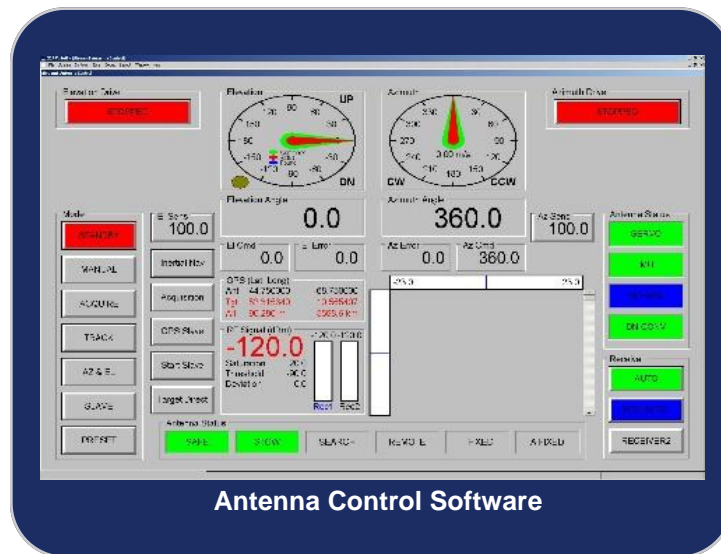
The VT-012 is a dual axis 1.2m parabolic reflector autotracking antenna, it is self-contained and is simple to setup and operate. The VT-012 has a dual polarization head that can receive signals with gains of L band 24dBi, S band 26dBi, C band 28dBi and track using a digital rotary scan autotracking technique with continuous rotation in both azimuth and elevation via slip ring assemblies with dual channel rotary joints.



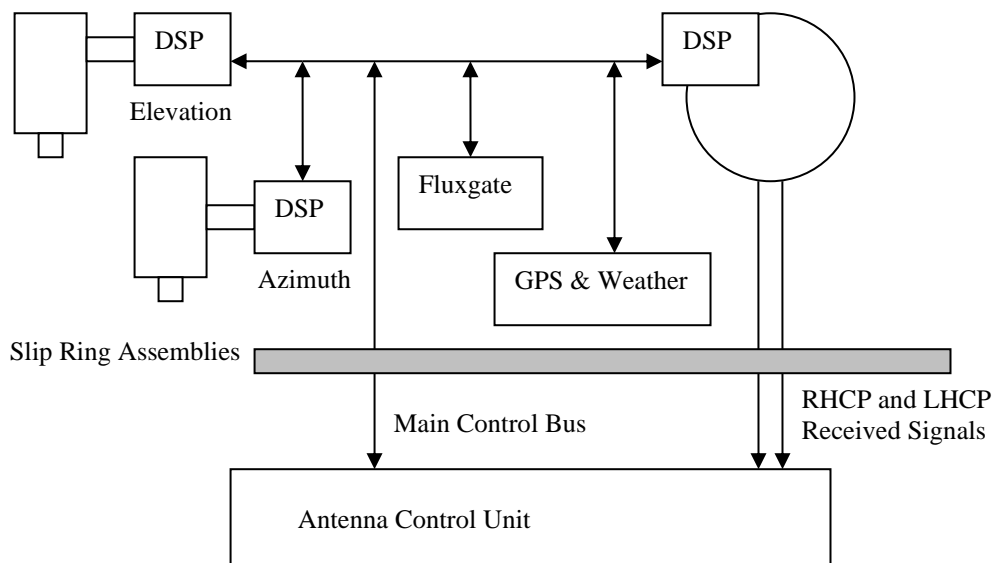
Features

- Simultaneous RHCP/LHCP or Vertical/Horizontal
- Simultaneous L, S & C Band Reception
- Triband Cavity Filters per Channel
- Digital Rotary Scan Head
- Autonomous auto-tracking
- Multiple mode slave tracking
- DC Brushless overrated motors
Absolute encoders better than 0.002° accuracy
- Fully integrated auto-calibration system
- Solid Carbon Fiber Reflector
- Windows 10 Based ACU Software
- Ethernet remote control and monitoring
- No special ACU hardware needed
- Light weight composite construction
- Corrosion resistant throughout
- Fully Integrated Tri-Band Tracking/Data Receiver
- Optional Items
 - Bore site video camera
 - Acquisition aid antenna
 - Receive & optional transmit

The VuSoft software is used to provide the Antenna Control Unit (ACU) functions. This provides auto calibration, slaved "pointers", Program Tracking, Pre Tracking, Slaved Tracking and Full Auto-tracking systems together with optional data acquisition and data storage. The VT-006 is controlled via Ethernet that allows the antenna to be placed virtually anywhere that can be reached by a LAN making it possible to remote control or slave multiple antennas together even over exceptionally long distances



The VT-012 is controlled via an Ethernet link that allows the antenna to be placed virtually anywhere that can be reached by a satellite link or WAN making it possible to remote control or slave multiple antennas together even over exceptionally long distances.



Antenna Block Diagram

SPECIFICATIONS

Operating & Performance	
Type	Parabolic Solid Carbon Fiber Clamshell Reflector
Reflector Size(S)	1.2 Meter / 3.93 Feet
Operating Frequency	L-Band 1435.5-1540.5 MHz S-Band 2185 - 2485 MHz C-Band 5090.0-5250.0 MHz OR 4400.0 to 4900.0 MHz
G/T	Approximately 6.0 dB/K at S-Band
Polarization	Simultaneous dual polarization reception (Vertical/Horizontal or RHCP/LHCP)
Main Antenna Gain (Minimum)	24.0 dBi @ 1435 MHz 26.0 dBi @ 2350 MHz 28.0 dBi @ 5150 MHz
Side-lobes	-20 dB Under Main Beam @ S-Band
Beam Width 3db	7.0° @ L-Band 4.8° @ S-Band 3.2° @ C-Band
Acquisition Angle (Maximum)	±12.0° @ L-Band ±8.5° @ S-Band ±5.8° @ C-Band
VSWR (Maximum in band)	Better than 2:1
Tracking Receiver	Fully integrated dual channel L, S & C band, TIER0, TIER1, TIER2. 30MHz maximum input BW. Offers improved tracking speeds and accuracy over older style external tracking receivers.
RF Outputs	Dual amplified wide band (L, S & C simultaneous), approximately 30dB throughput gain, filtered via first stage tri-band cavity filters for ultimate external RF noise rejection.
DRIVE PEDESTAL	
Motor	Dual Brushless Motors with Closed Loop Feedback For Constant Positional Accuracy and Full Power At Standstill
Stabilization	Integrated 9 axis INU
Bearings	Sealed, maintenance-free bearings, designed to carry at least double the weight of the moving parts (reflector, feed, etc.).
Gear Box	Cycloid with excellent positioning accuracy and zero (less than 1 arc-min) backlash High torque capacity High single-stage reduction ratio High efficiency Minimal wear, long life High torsional stiffness Long life expectancy with minimal maintenance and zero adjustments
Servo Amp	State-of-the-art closed loop servo amplifiers with comprehensive DSP motor protection and ACU monitoring.
Connectors	MIL-DTL-38999 aerospace grade sealed connectors for outdoor connections
Slip Rings/Joints	Sealed slip rings and dual channel rotary joint for continuous 360 degrees azimuth rotation.
Environmental (System)	
Velocity	Up to 45°/sec Azimuth & 45°/sec Elevation (simultaneously)
Acceleration	Up to 110°/sec ²
Azimuth Travel	Continuous Unlimited (Sliprings and Rotary Joints Fitted)
Elevation Travel	Continuous Unlimited (Sliprings and Rotary Joints Fitted)
Temperature Non-Operating	-40° C to +70° C
Temperature, Operating	-30° C (with optional heating) to +65° C Plus Solar

Relative Humidity	Up to 100% Including Condensation
Rain	Up to 5-inches Per Hour
ICE	One-half Inch, Radial
WIND, Operating	110 km/h / 68 Mph
WIND, Survival	200 km/h /120 Mph
Weight	255 kg / 560 lbs. (approximate)
Power & Electrical	
Power Requirement	320 W Typical, 600 W Peak
Voltage/Frequency	96 to 245 VAC, 50/60 Hz, 1 \emptyset
Antenna Operation & Control, Positioning	
<i>Selectable Types</i> VuTrack Software	Windows 10 OS based – Customer Computer/Laptop
ACU-022 Antenna Control Unit	19 inch Rack Mount with Remote/Client Control
Antenna Control Interface	Ethernet
GPS	Position and Height with Inbuilt Geodetic Model
Optional Components	
Optional Acquisition Aid	Dual channel L & S & C band, 13dBi S-Band, $\pm 25^\circ$ Acquisition angle in S-Band
Optional Safety	Ion Shedding Lightning Protection
Optional Weather Station	Two Axis Ultrasonic $\pm 0.1^\circ$