

QTrack™ PORTABLE LOW GAIN ANTENNA



- **Self-Contained Ground Station**
The low gain antenna based on the Quasonix Acquisition Aid Antenna, coupled with the industry-leading RDMS telemetry receiver, is the perfect solution for portable or mast mounted antenna applications
- **NEW! Optional QTrack Camera Kit**
COHU 3430HD series camera, 1080 pixel, 30 fps, 30x optical zoom (4.5 mm to 135 mm focal length)
- **Portable**
Carrying case doubles as a local mount for a free-standing antenna; incorporates built-in leveling feet (3) and level indicator
- **Simplified Two Cable Connection**
Requires only 115 VAC 1Ø 60 power and an RJ45 Ethernet connection (with IP option)
- **Simultaneous LHCP and RHCP RF Outputs**
2-channel rotary joint allows continuous azimuth travel
- **Dual Axis Pedestal**
Multi-band SCM feed mounted in a dual axis pedestal; includes power supplies, slip rings, and rotary joint
- **Electronic Scanning for Highly Dynamic Targets**
Feeds sweep the beam electronically allowing scan rates up to 50 kHz—greatly mitigating the challenges inherent in tracking targets that impose high degrees of amplitude modulation on transmitted signal

ANTENNA CONTROL UNIT (ACU)

Quasonix combines a state-of-the-art FPGA based, real time ACU with a straightforward user interface for local or remote control. This enables the user to work from a single integrated display for configuring, monitoring, and controlling all missions. All status related to the pedestal and ACU operations can be continuously broadcasted via a multicast port, allowing any computer on the network to gather all system information in one data log, time-stamped ASCII file.

- **Front Panel Azimuth and Elevation Axis Hand Wheels**
- **Back Panel USB, Ethernet, Serial, and Test Ports**
- **Solid State Hard Drive**
- **Redundant Power Supplies**
- **Remote Operation**
- **Comprehensive Calibration Tools**

Control any auto-tracking antenna with the Quasonix user interface

The screenshot displays the 'Remote ACU' software interface. It features several main sections:

- Elevation:** A circular gauge showing 'Elevation (Degrees)' with a red needle pointing to 0. Below it are 'Actual' (0.00), 'Commanded' (0.00), and 'Slave' (---,--) readouts.
- Tracking Error:** A circular gauge showing 'Tracking Error' with a red dot at the center (0.0).
- Azimuth:** A circular gauge showing 'Azimuth (Degrees)' with a red needle pointing to 360. Below it are 'Actual' (360.00), 'Commanded' (0.00), and 'Slave' (---,--) readouts.
- Feed Control:** Two red buttons labeled 'Feed' and 'LNA'.
- AGC (Automatic Gain Control):** A section with 'Selected Rx Level' (0 dB), 'Auto Rx' (yellow button), and 'MPC' (grey button). It also shows four vertical bars for 'RHCP', 'LHCP', 'RX3', and 'RX4', and 'Display Units' set to 'dB'.
- Axis Control:** A central area with a 'Designate' button and a grid of control buttons for 'Elevation', 'Both', and 'Azimuth'. The buttons include TRACK, ACQUIRE, SEARCH, SLAVE, MANUAL (highlighted in green), and STANDBY. A 'SERVO' button is at the bottom.
- Handwheel Settings:** A section for 'Accel Limit [% Max Accel:]' with a slider set to 100. It lists settings for Elevation and Azimuth: Max Velocity (20.00), Max Accel (15.00), and Handwheel Max Accel (15.00).
- Input Controls:** 'Elevation Input Control' and 'Azimuth Input Control' sections, each with 'Hand Wheel Position', 'Hand Wheel Velocity', and 'Joystick Velocity' buttons.
- Footer:** A status bar showing the date '2016-01-06', time '10:44:34.656', the Quasonix logo, and an 'Exit' button. Navigation icons for 'Logging', 'Status', 'Settings', 'Tools', 'Help', and 'In Control' are also present.

ANTENNA CONTROL UNIT (ACU)

ACU1000 Antenna Control Unit

- **Flexible Interfaces—Control Any Brand of Pedestal**

The Quasonix ACU1000 employs a modular design approach so it can control Quasonix antenna pedestals AND interface to legacy products from EMP, Malibu, and others

- **Intuitive User Interface**

Real time pedestal interface; Hand wheels or USB joystick for local control; Mouse and keyboard provide intuitive remote control; For remote-only applications, the ACU1000 is available without the touch screen chassis

- **Multiple Tracking Modes**

Accepts pointing data from remote customer slave sources; Server based local ACU allows for slaving of one PD series to another and enables tracking from user provided files of predicted or projected data

- **Robust Industrial Design**

Redundant power supplies and either Linux or Windows 7 operating systems yield rock-solid performance and zero maintenance

- **Client-Server Architecture for Maximum Operator Control**

Operates in either local or remote modes with the remote interface consuming only a few kbps of network bandwidth; Multiple operators can view the local ACU simultaneously while a request channel allows control to be moved to any remote

- **Supports HyperTrack™ Interface**

Bypassing the legacy AM and AGC interfaces entirely, the revolutionary HyperTrack™ interface from Quasonix brings you faster, more accurate tracking than you've ever seen before; Schedule a demo today

- **Comprehensive Diagnostics**

Built-in Test (BIT) and target simulation ensure peak performance on every mission; Comprehensive data logging utilities allow detailed post-mission analysis

The screenshot displays the ACU1000 software interface with several windows open:

- Velocity & Acceleration Test:** Features a 'Test Control' section with 'Mode' set to 'Position', 'Elevation' and 'Azimuth' buttons set to 'OFF', and a 'Start' button. Below are two graphs: 'Position' (0 to 1,000) and 'Velocity' (0 to 1,000).
- Logging Control:** A dialog box for logging configuration. 'Directory' is 'C:/Users/meckhoff/Documents'. 'Log Changes Only' is 'ON', and 'Enable Logging' is 'OFF'. The 'Log Data' section contains numerous toggle switches for various parameters, all currently set to 'OFF'.
- Status:** A diagnostic window with four columns: 'Elevation', 'Azimuth', 'General', and 'DACU'. Each column lists various status indicators with green (enabled/valid) or red (fault) lights. A 'ClearFaults' button is at the bottom.
- Settings:** A configuration window with sections for 'This Computer' (ACU, Hand Wheels, Joystick, Slaves), 'Remote ACU' (DACU, Transition Alarm, System Location, Stow), and 'Preferences' (Elevation, Azimuth, True North, Advanced, Designates, Search, Tracking, Access Control List). It also includes 'Store Factory Backup' and 'Restore Factory Backup' buttons.

CIRCULAR AND RECTANGULAR ANTENNA AND PEDESTAL SPECIFICATIONS

	Low Gain Circular	High Gain Rectangular
Operating Frequency	1435.0 - 2400.0 MHz continuous, 4400.0—5250.0 MHz continuous	2200.0 - 2395.0 MHz continuous, 4400.0—5250.0 MHz continuous
Polarization	Simultaneous Right Hand and Left Hand Circular	Simultaneous Right Hand and Left Hand Circular
VSWR	2:0:1 maximum	2:0:1 maximum
Axial Ratio	2.0 dB maximum	2.0 dB maximum
Antenna Type	Electronic Scanning	Electronic Scanning
Array Size (Diameter)	13.25 inches nominal	Approximately 20" W x 12" H
Weight	< 15 lbs (7 kg)	< 20 lbs
Antenna Gain (nominal, linear polarized receive, RHCP and LHCP outputs combined)	1435.0 MHz +7.0 dB 2400.0 MHz +10.0 dB 4400.0 MHz +9.0 dB 5250.0 MHz +9.0 dB	2300.0 MHz +16.0 dBic 4800.0 MHz +21.0 dBic
Antenna Beamwidth (3 dB) (nominal)	40°	28° x 14°, S band 14° x 7°, C band
Sidelobes (nominal)	10 dBp	10 dBp
Environmental		
Temperature	Operating -40°C to +52°C Storage -54°C to +71°C	Operating -40°C to +52°C Storage -54°C to +71°C
Relative Humidity	Up to 100%, including condensation (radome protected)	Up to 100%, including condensation (radome protected)

Pedestal Specifications

Type	Elevation/Azimuth
Backlash	≤ 0.2 degrees
Velocity	≥ 30°/sec
Acceleration	≥ 40°/sec ²
Travel Azimuth	Continuous
Elevation	-90° to +90° (Software, Electrical, and Mechanical limited provided)
RF Cabling Capability	Two RF channels supporting frequencies through C-band, VSWR 2.0:1 Maximum each RF channel
Weight	25 lbs nominal
Power Requirements	115 VAC, 60 Hz, 1Ø
Environmental	
Operating Temperature	-40°C to +52°C
Storage Temperature	-54°C to +71°C
Relative Humidity	Up to 100%, including condensation (radome protected)
Rain	Up to 4 inches per hour
Ice	1/2 inch, Radial
Wind	Operating 50 MPH (80 Km/Hr), Gusting to 65 MPH (190Km/Hr), Survival at 120 MPH (193 Km/Hr)

Specifications subject to change without notice