

Antenna Control Unit

RACU-1000-q16

Features

- **Single key antenna positioned**
- **Simultaneously displays on front panel LCD:**
 - Az, El, Pol angles
 - Received signal strength
 - Satellite name and longitude
- **Non Volatile Memory**
 - Stores up to 38 preset position and polarization combination
- **Continuous Antenna Status Monitoring**
 - Motion limits
 - Drive error monitoring
 - Maintenance info.
 - Emergency stop and runaway conditions
- **Dual Speed: Fast slewing, fine positioning**
- **Inclined Orbit tracking:** Step track, memory & search modes
- **PC control:** Optional RS-422 interface
- **Opto-isolators:** Up to 5KV rated, opto-isolation.

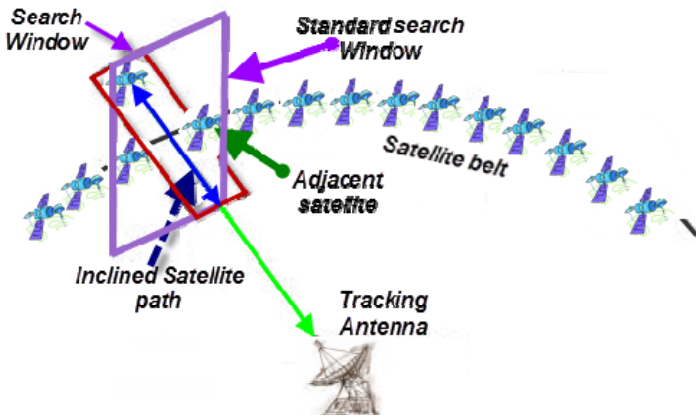


The **RADITEK, RACU-1000-q16** controller is all you need for any satellite, including inclined satellite, tracking system. The ACU works with any L, C and Ku band antenna from 0.4 to 10m. It offers the best tracking solution for new installations, as well as **upgrading, older existing antenna systems**. Even if the satellite (up to 5 inclined satellites) **has declined into an inclined orbit**, for example and it has PC remote control ability, and optically coupled drive outputs, limit inputs that provide isolation between the outdoor unit and the rack mounted **RACU-1000-q16**. Antenna position sensing is performed by a high resolver system. Up to 38 preset satellites can be stored and fast slewing as well as fine positioning speeds are possible.

This controller is designed for future expansion as well, It has extra ports for potentiometer based feed control, RF power measurement circuits, TTL compatible Digital inputs, and form C relay outputs.

The ACU continuously monitors: Motion limits, maintenance Drive error, emergency stops and runaway conditions.

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The **RACU-1000-Q16** has a special intelligent algorithmic search feature that reduces errors associated with traditional “box” search methods.

The **RACU** search algorithm calculates the satellite trajectory, and stores it for future reference. Even an inclined satellite can be tracked as easily as a normal one. To do this, select **AUTO** mode, select the satellite from the list there, select the proper polarization, and the **RACU-1000-q16** does the rest.

This tracking algorithm can be operated in 3 modes:

STEP_TRACK/PROGRAM_TRACK/SEARCH

The user jogs the antenna to the satellite, and verifies its' identity. The system enters...

STEP_TRACK MODE: the controller periodically peaks the receiver's AGC signal strength, by jogging the antenna. The controller records the time and position in its non volatile memory.

The inter-peak interval is determined by antenna beam width, satellite inclination, and a user specified error in dB.

STEP_TRACK mode changes to:

PROGRAM_TRACK, once the satellite's motion corresponds to a previously stored normal trajectory. In this mode, the controller smoothly moves the antenna in Azimuth and Elevation, to positions defined in its (pre-stored) **tracking tables**. Antenna actuator wear can be minimized by a user specified “maximum allowable error” entry, that can result in a fewer antenna movements. The track table accuracy is maintained by peaking the receiver's AGC periodically. **Once the error is out of the operator's requested range, the all entries in the track table are tagged for update. The user can specify once a day to once a week.**

If the satellite signal is lost, the **SEARCH** mode is activated, which uses the intelligent search algorithm to rapidly reacquire satellite lock.

Specifications:

Track mode:		
Antenna size	0.4 to 10	meters
Tracking modes	Intelligent, Step and program track	
Inclined satellites	Can track up to 5	
AGC inputs	2 x ±15	Volts
Input impedance	4	MΩ
ANTENNA interface:		
Control Output	Protected, open collector relay drivers	
Control Output	I max=700	mA
Control Output	Vmax=60	V
Positioning	Low voltage resolver interface	
Alarm output	3A @30Vdc or 3A @ 125V (NO and NC)	
Physical:		
Size	19 x 3.5 x 9 (rack)	inch
Weight	19	Lbs
Operating temp.	0 to 50	°C
Power (AC)	115/230 (48W)	VAC 50/60Hz