SPACE

ANTENNA CONTROL UNIT

Satellite communications, earth observation, navigation and positioning and control stations

indracompany.com
ANTENNA CONTROL UNIT

Product highlights

The Antenna Control Unit (ACU) has been developed by Indra particularly for geostationary antenna control and it is the main part of a complete servo system, that includes motors, drivers, encoders...

The user has full access to ACU operating modes and configuration parameters through the local interface (MMI) on a 12.1" TFT touchscreen colour display.

The equipment is a x86-based industrial platform 19" rack mounted unit (5U) with COTS components for reliability and availability purposes.

All the boards, including the CPU, are plugged in a PCI/ISA bus for easy replacement in case of maintenance activities or future upgrades.

Maximun satellite tracking capability

ACU main tasks

- Satellite tracking strategy (steptrack, monopulse, program track...)
- User interface: local (from the equipment display) and remote (from the TDI/P standard interface)

Operational modes

Position
- Position movement of one or more axes
- Velocity movement of one or more axes
- Preset
- AZ, EL and POL simultaneous movements, at the specified time

Step
- Incremental position movement
- Manual search
- Spiral search movement (in the AZ-EL plane)
- Autotrack
- Several modes available: monopulse, steptrack, programtrack (TLE, STDM, INTELSAT 11 p, AZ-EL table...)

Sun track
- Sun trajectory prediction and tracking
- Geo target
- Pointing to a GEO satellite predefined in the data base by the user
- Survival
- Movement to the stow position (zenith)

General specifications

Position transducers
- Optical encoders, SSI or EnDat protocols. Resolution: 12-31 bits.
- Other interfaces (synchro, resolver) on request

User interface
- 12.1" TFT color display with touch screen
- Resolution: 800x600 pixels

Remote control I/F
- Ethernet TCP/IP as standard. On request: RS-232, RS-485 and GPIB

Drive cabinet I/F
- Ethernet TCP/IP, QNET protocol for Indra standard drive cabinet
- Others on request (CAN)

Tracking receiver I/F
- 16 bits analog inputs: AGC (0-10Vdc), Vx, Vy (±10Vdc)
- LOCK (dry contact)

Time synchronization
- IRIG-B, A and NASA

General I/O
- Optional 16 dry-contact digital outputs/16 isolated digital inputs
- RF switch monitoring and control on request

Dimensions
- 19" rack mounted unit. 5U, 500 mm depth
- Other implementations on request

Power consumption
- 220 Vac 50/60 Hz ±10%. 150W

Environmental
- Temperature: 5-45°C. Humidity: 0-90% non-condensing
ACU

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Maximum satellite tracking capability

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The equipment is a x86-based industrial platform 19” rack mounted unit (5U) with COTS components for reliability and availability purposes.

All the boards, including the CPU, are plugged in a PCI/ISA bus for easy replacement in case of maintenance activities or future upgrades.

The ACU is based on the Real Time Operating System (RTOS) QNX 6.x, that allows multitasking and real time operations in industrial environments.

Because this RTOS is very compact, a little amount of memory is used and there is no need for mechanical storage devices.

Operational modes

Position

Position movement of one or more axes

Velocity

Velocity movement of one or more axes

Preset

AZ, EL and POL simultaneous movements, at the specified time

Step

Incremental position movement

Manual search

Spiral search movement (in the AZ-EL plane)

Autotrack

Several modes available: monopulse, steptrack, programtrack (TLE, STDM, INTELSAT 11 p, AZ-EL table...)

Sun track

Sun trajectory prediction and tracking

Geo target

Pointing to a GEO satellite predefined in the data base by the user

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Movement to the stow position (zenith)

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Drive cabinet I/F

Ethernet TCP/IP, QNET protocol for Indra standard drive cabinet

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16 bits analog inputs: AGC (0-10Vdc), Vx, Vy (±10Vdc)

LOCK (dry contact)

Time synchronization

IRIG-B, A and NASA

General I/O

Optional 16 dry-contact digital outputs/16 isolated digital inputs

RF switches monitoring and control on request

Dimensions

19” rack mounted unit, 5U, 500 mm depth

Other implementations on request

Power consumption

220 Vac 50/60 Hz ±10%. 150W

Environmental

Temperature: 5-45°C. Humidity: 0-90% non-condensing

ACU main tasks

• Satellite tracking strategy (steptrack, monopulse, program track...)

• User interface: local (from the equipment display) and remote (from the TCP/IP standard interface)

• Position loop of up to three axes (azimuth, elevation and polarization)

• Time synchronization

• Interface with an external tracking receiver

• Interface with a Servo Drive Cabinet

General specifications

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