sat-nms ACU-RMU - Rack Mount Unit Antenna Controller

The **sat-nms** ACU-RMU is a complete and compact 6RU 19" rack-mount chassis antenna controller with optional high performance tracking. It can be used as a cost-efficient antenna position controller or as a full featured antenna step-track system. The system is based on the **sat-nms** ACU-ODM Module and includes three motor-driver units. All interfaces to the satellite ground station antenna are accessible via connectors at the rear panel of the 19" chassis, so that it is easy to be integrated.

The **sat-nms** ACU-RMU can not only be used to point your antenna precisely to the satellite but also with the option to perform highly accurate step-tracking, adaptive tracking including orbit prediction.
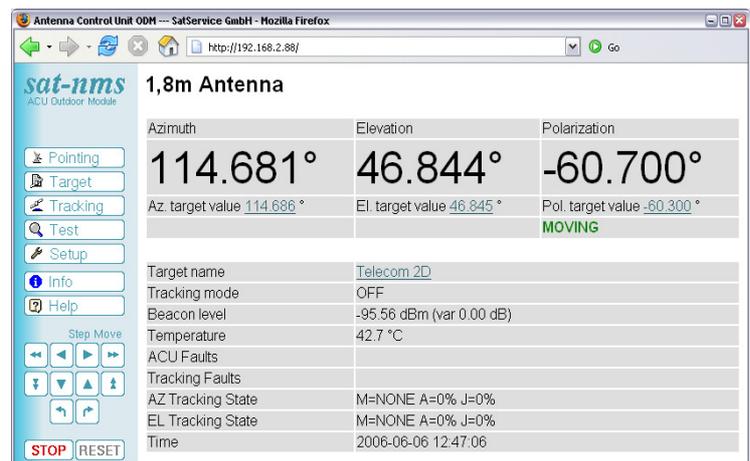
The **sat-nms** ACU-RMU includes:

- Three independent and flexible motor-drive interfaces, which allow simultaneous driving of all 3 axes with 3-phase frequency inverters (Az. and El.) up to 3kW (larger power available in other mechanical configurations) and solid state relays (Pol.)

- Direct Ethernet UDP Interface for **sat-nms** LBRX Beacon Receiver

- Analog Voltage Interface for 3rd party Beacon Receivers

- Resolver analog Angle Detector Interface measuring Azimuth, Elevation and Polarization

- Optical SSI Interface high precision Digital Angle Detector as Alternative

- Analog ADC Interface to measure the Voltage across a Precision Potentiometer also available

The **sat-nms** ACU-RMU Unit includes an integrated web server and provides its operator interface via web browser. The **sat-nms** ACU-RMU includes also http and ftp for remote diagnosis and support. The system is easy to maintain. All support can be performed remotely and the interface to high-level Monitoring and Controlling Systems is provided via Ethernet, TCP/IP, SNMP and RS232.

Key Features

- Web-based, user-friendly Operator Interface
- Operating via Front Panel Display and Keypad
- Step-track and Adaptive Tracking
- Very compact 6RU 19" rack-mount Design
- Integrated 3-phase Frequency Inverters
- HTTP and SNMP for external MNC Interface

Contact Information

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Technical Specification

Positioning

Operational Modes *sat-nms* ACU-RMU	Manual Mode, Positioner
Operational Modes *sat-nms* ACU-RMUT	Manual Mode, Positioner, Step Track, Adaptive Tracking, Program Track.
Position Encoding	Resolver, optical digital SSI and Potentiometer, scalable per Axis
Quantization Error	Resolver 16bit: 0.0055°
	SSI: 13bit: 0.044°, 16bit: 0.0055°, 17bit: 0.0028°, 19bit: 0.0007°
Display Position Resolution	0.001°
Maximum Travel Rate of each Antenna Axis	1°/sec
Interfaces to Beacon Receivers	*sat-nms* LBRX or analog Voltage Input for other Vendors Equipment
Analog Voltage Input	0 to 10V via SMA Female Connector
Option Tracking Accuracy	Encoder coupling and alignment error should not exceed 0.003° to achieve specified tracking accuracy. The influence of antenna structure thermal error is not considered.
In step-track Mode	Better than 10% of Receive 3dB Beamwidth (RMS).
With smoothing Tracking Mode	Better than 5% of Receive 3dB Beamwidth (RMS).
Position Encoding	1 LSB of Resolver / Digital Conversion
Operational Modes	Manuel Mode, Step Track, Adaptive Tracking takes into account last days history, Program Tracking based on time stamped file data
Number of Presets	99 Storage of *sat-nms* ACU Configuration (including *sat-nms* LBRX Beacon Receiver Settings)

System Interfaces

MNC Interface	10-Base-T, via HTTP GET Requests, RS232 and SNMP
Operator Access	With Web Browser
To *sat-nms* MNC and *sat-nms* ACU-IDU	Ethernet RJ45
To 6 Limit Switches	Opto-Coupler Input for Azimuth, Elevation and Polarization / D-Sub-M 9pol
Interlock and motors-off Switches	Opto-Coupler Input / D-Sub-F 9pol
3 Angular Detectors	Resolver, SSI or A/D Input / D-Sub-F 9pol
Motor Driver Interface	Via Opto-Coupler In- and Outputs: Motor on/off and Direction, low and high Speed Selection, Reset Driver, Driver Fault for Frequency Inverter, DC servos etc.
Motor Interface	Harting HAN6E Female with Frequency Inverter up to 3kW (AZ/EL) and HAN3E Female up to 0.9kW (Pol) with Solid-state-relays and RC-Combo.
Power Supply Interface	Harting HAN6E Male (3ph. Motor Power) / HAN3E Male (1ph. *sat-nms* ACU-ODM)

Electrical and Mechanical Specification, Environmental Conditions

Supply Voltage	380VAC Mains Voltage 3 phase / 230VAC Mains Voltage Single Phase
Power Consumption	100W + Motor Power
Temperature Range	-10° to 50°C
Humidity	Up to 90% non-condensing
Dimensions	19", 6RU, 450x270x380 mm (WxHxD)