

sat-nms ACU19 - Antenna Controller

The **sat-nms** ACU19 is an antenna controller with optional inclined orbit tracking. It can be used as a cost-efficient antenna-positioning controller or as a full featured antenna tracking system. The system is based on the **sat-nms** ACU-ODM and provides three DC-motor-driver interfaces up to 15A/24V in the 19" 1RU chassis. Two model variants are available:

sat-nms ACU19	Positioning Controller	Cost-efficient Pointing
sat-nms ACU19T	Inclined Orbit Tracking	Positioning Step-track

The **sat-nms** ACU19 can not only be used to point your antenna precisely to the satellite but also with the option to perform inclined orbit satellite tracking. The software implements the standard step algorithm.

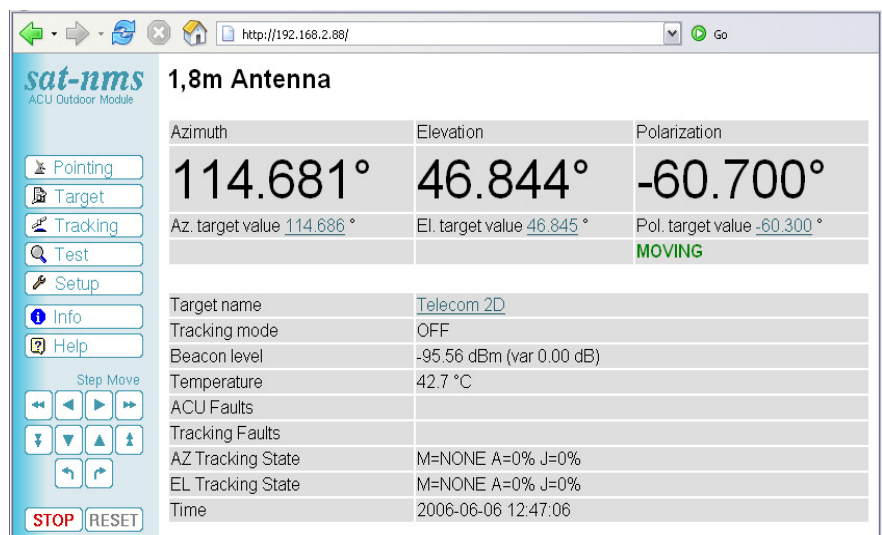


The **sat-nms** ACU19 includes:

- Three independent DC-drivers, which allow simultaneous driving of all 3 axes
- Limit switches, alarm circuits for mechanic protection
- Digital angle detectors with SSI interface measuring the azimuth, elevation, polarization
- A/D interface to measure the voltage across a precision potentiometer for polarization angle

The **sat-nms** ACU19 unit includes an integrated web server and provides its operator interface via web browser. The **sat-nms** ACU19 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 MNC systems is provided via Ethernet and TCP/IP.

In addition to that a local keypad and display are available to allow local control via the front panel.



ASTRA 19.2E	175.224A	38.756E	-12.41P
STEP 81.3h			-76.34B

Key Features

- Web-based, user-friendly Operator Interface
- Operating via Front Panel Display and Keypad
- Step-track Algorithm as Option available
- Very compact rack-mount Design in 1RU
- Integrated DC motor Drivers up to 15A/24V
- HTTP Protocol for external MNC Interface

Contact Information

SatService
 Gesellschaft für Kommunikationssysteme mbH

 Hardstrasse 9, D-78256 Steisslingen, Germany
 Phone +49 7738 99791 10,
 Fax +49 7738 99791 99
 E-Mail sales@sat-service-gmbh.de
www.satnms.com, www.sat-service-gmbh.de

Technical Specification

Positioning

Operational Modes sat-nms ACU19	Manual Mode (Positioning)
Operational Modes sat-nms ACU19T	Manual Mode (Positioning) and Step-Track
PRESETS, Storage of sat-nms ACU System Configuration	99 (including Beacon Receiver Configuration of LBRX)
Position Encoding	Digital SSI (Azimuth, Elevation) (optional Resolver)
	Potentiometer (Polarization)
Quantization Error	Resolver 16bit: 0.0055°
	SSI 13bit: 0.044°, 16bit: 0.0055°, 17bit: 0.0028
Maximum Travel Rate of each Antenna Axis	1°/sec
Interface to Beacon Receivers selectable	sat-nms LBRX or analog Voltage Input

System Interfaces

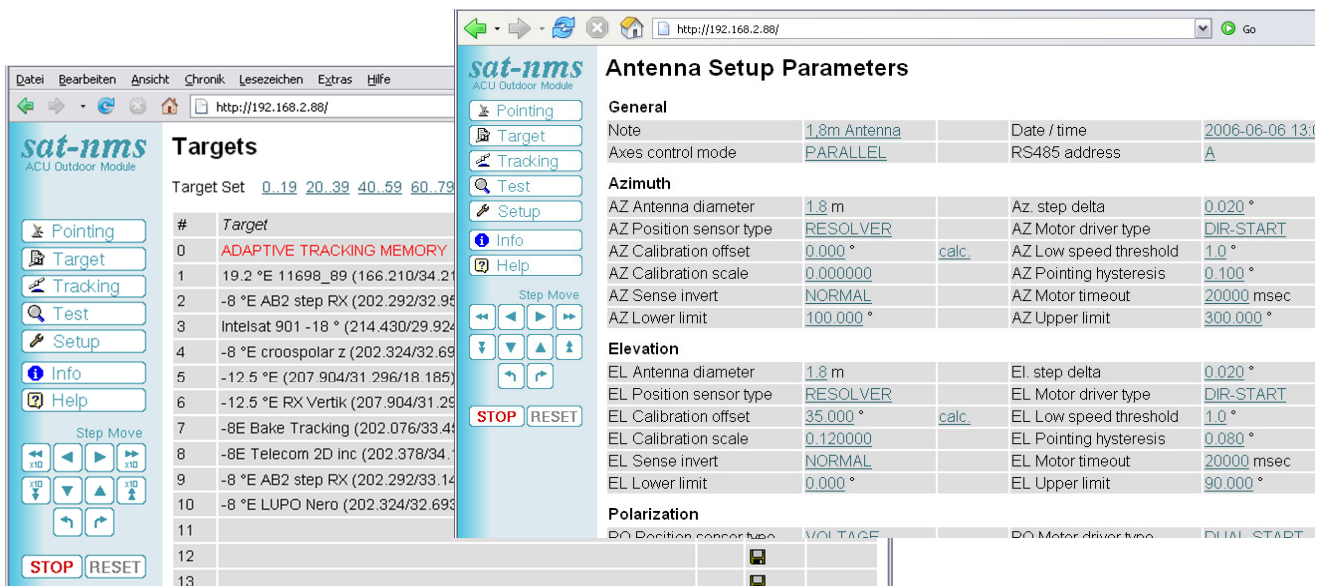
To sat-nms MNC and sat-nms ACU-IDU	Ethernet or RS232
To 6 Limit Switches	Opto-Coupler Input/ Mini Combicon MCV1.5/XX-G-3.5
Azimuth, Elevation and Polarization Motors	DC-PWM based 24V/ Combicon MCV2.5/XX-G-5.08
	Max. Motor Size 24V/10A
Interlock and motors-off Switches	Opto-Coupler Input/ D-Sub9
3 angular Detectors	Resolver, SSI or A/D Input/ D-Sub9

MNC Interface Specification

Ethernet Interface for sat-nms MNC and User Interface	10/100-Base-T, Via HTTP GET Requests
Operator Interface	Web Browser and Front Panel Display + Keypad
RS232 sat-nms MNC Interface	D-SUB9

Electrical and Mechanical Specification, Environmental Conditions

Supply Voltage	110 to 230V /50 to 60Hz 2A
Power Consumption	50 W + Motor Power
Temperature Range	-10° to 50°C
Humidity	Up to 90% non-condensing
Dimensions	19", 1RU, 450x45x380 mm (WxHxD)
Weight	5.5 kg

The screenshot shows the sat-nms web interface. The left sidebar contains navigation buttons: Pointing, Target, Tracking, Test, Setup, Info, and Help. The main content area is titled "Antenna Setup Parameters" and is divided into sections: General, Azimuth, Elevation, and Polarization. Each section contains a table of parameters and their values.

Antenna Setup Parameters			
General			
Note	1.8m Antenna	Date / time	2006-06-06 13:1
Axes control mode	PARALLEL	RS485 address	A
Azimuth			
AZ Antenna diameter	1.8 m	Az. step delta	0.020 °
AZ Position sensor type	RESOLVER	AZ Motor driver type	DIR-START
AZ Calibration offset	0.000 °	AZ Low speed threshold	1.0 °
AZ Calibration scale	0.000000	AZ Pointing hysteresis	0.100 °
AZ Sense invert	NORMAL	AZ Motor timeout	20000 msec
AZ Lower limit	100.000 °	AZ Upper limit	300.000 °
Elevation			
EL Antenna diameter	1.8 m	EL. step delta	0.020 °
EL Position sensor type	RESOLVER	EL Motor driver type	DIR-START
EL Calibration offset	35.000 °	EL Low speed threshold	1.0 °
EL Calibration scale	0.120000	EL Pointing hysteresis	0.080 °
EL Sense invert	NORMAL	EL Motor timeout	20000 msec
EL Lower limit	0.000 °	EL Upper limit	90.000 °
Polarization			
PZ Position sensor type	VOLTAGE	PZ Motor driver type	DUAL-START