The sat-nms ACU19V2 is an advanced automatic tracking antenna controller, which is based on the reliable and proven sat-nms ACU-ODM module. This specific unit can be used as a cost efficient antenna control unit to replace the Vertex / General Dynamics SATCOM Technologies Model 7200 Antenna Control Unit keeping the outdoor 7150 Antenna Drive Unit as it is. The replacement is simple plug & play by reusing the existing cables. The system is based on the sat-nms ACU-ODM Module and provides Model 7200 ACU fully compatible rear panel connectors in the 19” 1RU chassis.

Compatibility in this case means that the hardware interfaces are matching so that you can exchange the units against each other. The software inside the unit is SatService own high sophisticated software and pointing / tracking algorithm which is designed by SatService GmbH itself. This software provides advanced features like SNMP MIB and adaptive tracking and will be maintained and improved continuously by SatService.

The sat-nms ACU19V2 can be delivered either with the traditional resolver interfaces, but also with the SSI interface for optical encoders providing higher resolution than resolvers. Also the analogue voltage interface for an existing beacon receiver is available. SatService recommends using its sat-nms LB RX19 beacon receiver as this is much more powerful and can interface via Ethernet UDP packets to the antenna tracking system. This beacon receiver is now available not only with L-band IF but also with C-, X, Ku and Ka band input frequency range.

The sat-nms ACU19V2 points any antenna size precisely on the satellite both for geo- and inclined-orbit-satellite based on a special adaptive tracking algorithm. The sat-nms ACU19V2 records the tracked positions over several days and calculates based on this data a precise mathematical model, which is used to predict the antenna position. This reduces the step-track failures and provides continuous operation in case of a beacon receive failure. In the Program Tracking Mode the antenna follows a path defined by a file that contains time stamped azimuth, elevation and polarization values.

The sat-nms ACU19V2 includes:

- Drive Interface compatible with 7150 Antenna Drive Unit (includes limit switches, alarms, drive control)
- Ethernet UDP Interface for sat-nms LB RX and analog voltage interface for 3rd party beacon receivers

The sat-nms ACU19V2 unit includes an integrated web server and provides its operator interface via web browser. The sat-nms ACU19V2 includes also http and ftp for remote diagnosis and support. The system is easy to maintain. The support can be performed remotely and the interface to high-level MNC Systems is provided via Ethernet and TCP/IP or SNMP.

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

Key Features

- Adaptive Step Tracking with self-learning Orbit Model Tracking Algorithm
- Web-based, user-friendly Operator Interface
- Very compact rack-mount Design in 1RU
- HTTP and SNMP Protocol for external MNC Interface
- Resolver or optical SSI angular encoders

Contact Information

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Technical Specification

Positioning and Tracking

Position Encoding  Resolver or SSI optical encoder interfaces, TBD at time of order per Axis
Quantization Error  Resolver 16bit: 0.0055°
                    Optical SSI: 17bit: 0.0028°, 19bit: 0.0007°, 21bit: 0.00017°
Display Position Resolution
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 D-Sub 9pol 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 Beam Width (RMS).
Position Encoding
Operational Modes  1 LSB of Resolver / Digital Conversion
Manual 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 ACU Configuration (including LBRX Beacon Receiver Settings)

System Interfaces

sat-nms 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 or RS232
3 Angular Detectors  Resolver, SSI or A/D Input via D-Sub Connectors
Drive Interface for Limit Switches, Interlock, Motors-off Switches and Drive Interface  Via Opto-Coupler Inputs and Outputs according to the 7150 Antenna Drive Unit. Connector D-Sub 25pol.

MNC Interface Specification

Ethernet Interface for 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
Temperature Range  -10° to 50°C
Humidity  Up to 90% non-condensing
Dimensions  19", 1RU, 483x45x510(450) mm (WxHxD)
Weight  5.4 kg