



# RC3100

## Auto Acquisition Antenna Controller for Transportable VSAT



### FEATURES

- **Built In DVB Receiver**  
*Auto Acquisition independent of satellite modem*
- **Easy Operation**  
*One button deploy, one button stow*
- **PC Not Required for Setup or Operation**  
*2x16 LCD and keypad with 8 keys.  
Manual antenna control and troubleshooting from front panel.*
- **True Elevation Angle Sensing Inclinometer**  
*0.1 degree accuracy*
- **Automatic Pol Pointing**  
*ACU determines platform tilt.*
- **Optional Low Cost Compass**  
*Mounts on the upper edge of the antenna.  
Reduces auto acquisition time. Without compass the ACU scans the antenna over the full range of azimuth travel looking for DVB lock.*

### SPECIFICATIONS

#### PHYSICAL

**Size:** 2 U Rack Mount 17.0" (deep)

**Weight:** 15.0 lbs.

**Input Power:** 115/230 VAC: switchable, 50/60 Hz., 50 W idle, 220W when moving  
**CE compliant**

**Temperature:** 0° – 50° C

#### I/O

**Drive:** Az/EL/Pol Motors 12-24 VDC  
6 Amps max

**Sensor Input:** Az: Potentiometer and/or Encoder  
El: True Sensing Inclinometer  
Pol: Potentiometer and/or Encoder

**DVB:** DVB Standard: DVB-S  
Input Frequency Range: 950-2150 MHz  
FEC: 1/2, 2/3, 3/4, 5/6, 6/7, 7/8  
Sample Rate: 1-45 M\_samples per sec

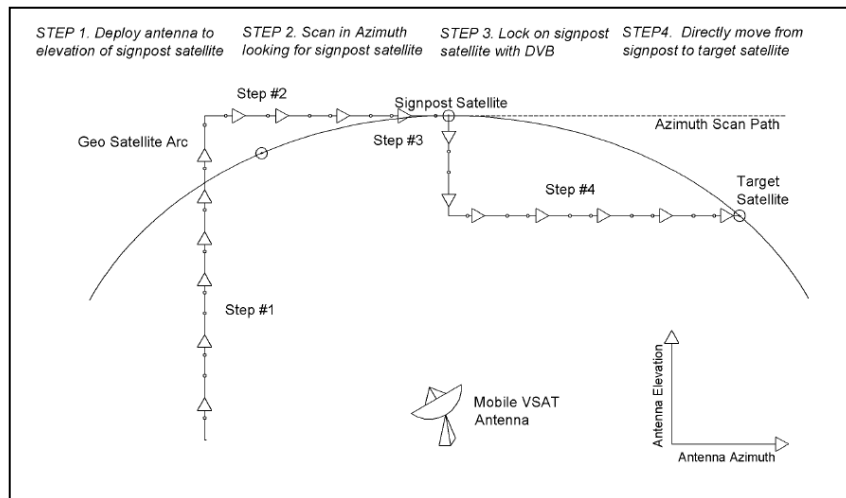
**Limits:** Over travel and stow limits for each axis

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## Auto Acquisition Sequence

On power up, the user will be prompted to either auto acquire or stow the antenna.

When the user selects Acquire, the ACU (antenna control unit) will deploy the antenna and perform a series of moves to determine the tilt of the platform.

After the antenna is deployed, the ACU will position the antenna at the elevation angle required to align the antenna with the SignPost satellite, see Step #1 above. The signpost satellite is specified via the ACU's SignPost Data Entry screen, shown below.

The ACU will then perform a scan in azimuth to find the SignPost satellite, see Step #2 above.

While the antenna azimuth scan is in progress, the ACU will monitor the DVB receiver for a Lock indication. When the DVB Lock condition is detected, the antenna azimuth scan will terminate and the ACU will peak up the antenna in azimuth and elevation, see Step #3 above. The DVB parameters are specified via the ACU's DVB data entry screen (shown below).

After the ACU peaks up on the SignPost satellite, the azimuth and elevation offsets between the SignPost and Target satellites are determined. The antenna can then be directly positioned on the Target satellite. An optional peak up based on the ACU's broadband power detector can be performed.

## Power On Screen

▲ ACQUIRE: 99W

Hit the Up key for Auto Acquire, hit the Down key for Stow

## SignPost Satellite Data Entry Screen

L:119W PL:H

Longitude: 180E - 180W

Polarization: H or V

Pol Offset: -90.0 to +90.0, this field specifies the polarization offset from the theoretical polarization value

## Target Satellite Data Entry Screen

FR:12010 FEC:7/8

Longitude: 180E - 180W

Peak up: Y or N, the ACU can optionally peak on the Target satellite using the ACU's built-in broadband power detector

Polarization: H or V

Pol Offset: -90.0 to +90.0, this field specifies the polarization offset from the theoretical polarization value

## DVB Data Entry Screen

FR:12010 FEC:7/8

DVB parameters associated with the SignPost Satellite ...

RF Receive Frequency: 950 - 2150 MHz

FEC (Forward Error Correction) Code: 1/2, 2/3, 3/4, 5/6, 6/7, 7/8

Symbol Rate: 1 to 45 Mega Samples per second