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Model 8860
Antenna Tracking Controller



The 8860 incorporates ViaSat's patented AdapTrack predictive tracking which "learns" satellite orbits and tracks geosynchronous satellites within 10% of the antenna's Beamwidth Radial Error (BRE). Now UL and FCC Compliant.

The Model 8860 ATC uses patented technology to give you easier and more refined control of your antenna system over four axes of motion: azimuth, elevation, and two motorized feeds. The 8860 provides manual and automatic positioning of all ViaSat motorized earth station antennas, in conjunction with the 8861A/8862 Antenna Position Controller (APC). The APC controls the positioning of the antenna, and reports position and faults to the ATC.

The 8860 operator may manually position the antenna, or select from up to 60 satellite locations stored in memory for automatic antenna pointing. Any or all of these satellites may be fixed position or use Autopeak tracking. Up to five of the satellites can use AdapTrack, INTELSAT, or Program track modes. Non-volatile memory protects all satellite tables and tracking databases.

ADAPTRACK TRACKING

The 8860 incorporates the patented AdapTrack algorithm for tracking geostationary and inclined orbit satellites up to 100. AdapTrack creates a model of the satellite motion over a twenty-four hour period with data collected via Autopeak (steptracking). AdapTrack learns the satellite motion and uses this information to predict the current position.

In approximately 90 minutes, the AdapTrack model is accurate enough to optimize antenna movement by commanding the antenna to the predicted position. This predictive movement greatly reduces the need for the typical "hunting motion" associated with similar tracking systems. This optimized movement also reduces wear and tear on the antenna drive components while maintaining a high degree of tracking accuracy. After approximately 24 hours, the model is accurate to within 5% of the antenna's Beamwidth Radial Error (BRE).

When the AdapTrack model is fully charged, the 8860 can continue tracking the satellite, using only predictions, even though the satellite beacon signal may be lost or degraded due to rain fade, receiver failure, or atmospheric scintillation. When the signal returns or stabilizes, the unit resumes updating the model.

In the event of a power failure the 8860 can resume AdapTrack tracking by predicting the position of the satellite after power is restored. The unit monitors elapsed time using a battery-back-up real time clock accurate to ±30 ppm. The onboard battery has a projected life span of 10 years.

8860 AT-A-GLANCE

- Microprocessor based
- Stores up to 60 satellite positions in non-volatile memory
- Multiple satellite tracking modes
- Four axis control
- Menu-driven front panel control, including alarms
- Indoor/outdoor transient protection

OPERATING MODES

- **Fixed Position**
  Non- tracking mode, up to 60 stored satellite positions
- **Autopeak**
  Improved Steptrack tracking mode
- **AdapTrack**
  Patented prediction tracking
- **Program Track**
  Up to 96 (24 hour) tracking positions input from external source
- **Intelsat Track**
  Uses IESS-412 11 – parameter ephemeris data

Model 8860 Antenna Tracking Controller Specifications

OPERATOR CONTROLS AND INDICATORS

Display	LCD, 2 line by 40 character
Menu–Keys	5 below LCD
Keypad	12 character
LEDs	Alarm and Motion
Power On/Off	

REMOTE CONTROL INTERFACE	SAbus (RS-422) and RS-232
BEACON LEVEL INPUT	2 inputs, 0-6V, 0-12V,±3V, ±12V
POWER REQUIREMENTS	115/230 VAC, 50/60 Hz, 5 Watts

ENVIRONMENTAL

Temperature	0° to 50°
Humidity	0 to 95% non-condensing

DIMENSIONS	483 x 89 x 230 mm (19W x 3.5H x 9D in.)
WEIGHT	1.8 kg (4 lb.)

TYPICAL ANTENNA TRACKING PERFOMANCE

ANTENNA DIAMETER	3dB BW	TRACKING BRE%[1]	dB LOSS[2,3]	MAX INCLINATION
3.6 m C-band	1.48	<10%	0.12	10.0°
5 m C-band	1.18	<10%	0.12	10.0°
6 m C-band	0.89	<10%	0.12	10.0°
7 m C-band	0.76	<10%	0.12	10.0°
9 m C-band	0.59	<10%	0.12	10.0°
11 m C-band	0.48	<10%	0.12	10.0°
13.5 m C-band	0.39	<10%	0.12	10.0°
16 m C-band	0.33	<10%	0.12	10.0°
18 m C-band	0.30	<10%	0.12	9.8°
3.6 m Ku-band	0.49	<10%	0.12	10.0°
4.5 m Ku-band	0.39	<10%	0.12	10.0°
6 m Ku-band	0.29	<10%	0.12	9.8°
7 m Ku-band	0.25	<10%	0.12	8.4°
9 m Ku-band	0.20	<10%	0.12	6.5°
11 m Ku-band	0.16	10.6%	0.14	5.3°
13.5 m Ku-band	0.13	13.1%	0.20	4.3°

CONTACT

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