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Sea Tel DAC 97

DESCRIPTION AND TECHNICAL DATA

The DAC-97 is an all digital version of Sea Tel's proven line of TAC-92 Antenna controllers.

1.1. CHARACTERISTICS

The DAC-97 Antenna Control Unit (ACU) communicates via an RS422 serial data link with the Pedestal Control Unit (PCU) located at the antenna. For unlimited azimuth pedestals, the RS422 link is coupled to the PCU via RF multiplexers. The Pedestal Control Unit stabilizes the antenna against the ship's roll, pitch, and turning motions. The DAC-97 ACU is the operator interface to the PCU and provides the user with a choice of positioning commands to point the antenna, search commands to find the satellite signal and tracking functions to maintain optimum pointing. The DAC-97 can incorporate a variety of signal strength receivers for tracking purposes.

1.2. DAC-97 FUNCTIONAL DESCRIPTION

The DAC-97 is housed in a standard 19-inch rack mount enclosure. The front panel contains a row of function keys used to select the desired information to be displayed and an array of numeric data entry keys for changing parameters or commanding the antenna functions. Data is displayed on a bright 40 character Vacuum Fluorescent display making it easy to read in all ambient light conditions. The DAC-97 can be mounted on chassis slides allowing easy access to all internal electronics. All external connections are brought out through three D-Subminiature connectors mounted on the rear panel. Flexible ribbon cable extends these connections to a terminal-mounting strip mounted on the rear of the rack enclosure separating the ship wiring from the Antenna Control Unit.

The DAC-97 allows the use of an internal flux gate compass, external flux gate compass or a shipboard gyrocompass as the long-term azimuth reference. The DAC-97 will accept a Step- by-step or 1:1, 36:1, 90:1 or 360:1 Synchro gyro interface or NMEA serial interface.

The DAC-97 automatically calculates the Elevation, Azimuth and Polarization pointing angles (POLANG) based on the ship's Latitude, Longitude and the desired Satellite Longitude position. A programmable pattern search will automatically scan the area for a desired satellite if no signal is found. These two features make locating a new satellite very easy.

A serial communications Monitor and Control (M&C) interface allows external control of the DAC-97 from a PC, ASCII terminal, or telephone modem. This interface can also be used to update the ship's Latitude and Longitude information from a GPS or LORAN system or update heading from a flux gate or gyro using the NMEA interface standard.

The DAC-97 will accept signal level information for tracking purposes from one of three internal receiver options or an external receiver. The standard internal receiver is a dual input full coverage wide band video receiver for tracking video transponders in all TVRO and most data applications. Two narrow band beacon-tracking receivers are available with either 70 MHz or L-BAND inputs to allow tracking on a satellite beacon or narrow band data carrier.

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1.3. DAC-97 TECHNICAL SPECIFICATIONS

• SPECIFICATIONS

1.3.1. General

- Physical Dimensions: 3.5 x 19" x 14"
- Mounting: 2 Unit high Rackmount
- Input Voltage: 110/220 VAC, 50/60 Hz
- Power Requirements: 100-Watts maximum
- Fuses: 2 Amp 110v input, both lines fused
1 Amp 220v input, both lines fused

1.3.2. Front Panel

- Keyboard: 4 Mode Select Keys
14 Numeric Input Keys
2 Up/Down Keys
2 Auxiliary Keys
1 Reset Key
- AlphaNumeric Display: 40 Character (2x20)
Vacuum Fluorescent Alpha Numeric
- Status Indicator Displa 4 LED enunciators

1.3.3. Rear Panel

- Controls: Power On/Off
Voltage Select
- Connectors:
 - External AGC 37 pin female D-Subminiature
 - Gyro Compass input 25 pin female D-Subminiature
 - RS-232/422 M&C 9 pin male D-Subminiature
 - RS-422 PCU interface 9 pin male D-Subminiature
 - RF Tracking Input Type F female L Band input
BNC 70 MHz input
 - AC Input Power IEC type receptacle

1.3.4. RF Tracking Input

- Wide band TVRO receiver:
 - Frequency Range: 950 - 2050 MHz
 - Detection Bandwidth: 16 MHz
 - Input Level: -65 to -20 dBm
 - LNB switching: 13/18 volt band select switching
- Narrow Band SCPC receiver:
 - Frequency Range: 950 - 1750 MHz (L band SCPC)
60 - 80 MHz (70 MHz SCPC)
110 - 170 (140 MHz SCPC)
 - Detection Bandwidth: 30 kHz

1.3.5. RS-232 Monitor and Control Interface

- Communications Parameters: 4800/9600 Baud, 8,N,1
- Device Type DTE
- Interface Protocol RS-232 or RS-422
- Interface Connector DE9P (J11)

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1.3.6. NMEA Interface

- Communications Parameters: 4800 Baud, 8,N,1
- Interface Protocol Optically isolated RS-422
- Interface Connector DE9P (J11 or J13)
- NMEA GPS Sentence: GPGLL, LCGLL
- NMEA Heading Sentence: HCHDM

1.3.7. External AGC Input

- Voltage Level: 0-5 volts DC
- Impedance: 1 meg ohms

1.3.8. Terminal Mounting Strip

- Synchro Interface: 5 screw terminal connections
- SBS Interface 4 screw terminal connections
- External AGC 2 screw terminal connections
- NMEA GPS 4 Screw terminal connections

1.3.9. Environmental Conditions

The following requirements apply to equipment installed in weather protected locations.

- Temperature 0 to 40 degrees C
- Humidity Up to 100% @ 40 degrees C
Non-condensing