MODEL 8821 SPECIFICATIONS

Internal Oscillator Options
B9 (Standard TCXO)
Accuracy while Tracking: 5×10^{-9}

Stability when coasting: Better than $\pm 1 \times 10^{-6}$ 0° C to + 50° C

B4 (Optional OCXO)
Accuracy while Tracking: 1×10^{-9}

Stability when coasting: Better than $\pm 1 \times 10^{-9}$ per day

Synchronization
The position of the antenna is determined by measuring the pseudo-range to four satellites and computing the position of these satellites using ephemeris data. The receiver basic specifications are as follows:

Receiver Description:	L1 C/A code pseudo-ranging
Channels:	Six independent, continuous tracking channels
Frequency:	1575.42 MHz
Acquisition Time:	Typically less than two minutes

Navigation Outputs
Latitude, longitude, and height with a position accuracy of ± 30 meters, 2 drms (without SA) are available on the RS-232 ports.

Tracking Modes
In its default tracking mode, the Model 8821 automatically tracks one to six satellites, as available, on a stationary platform.

Two other modes, one for use on a moving platform and the other for use with an operator-entered fixed position, can be selected.

Timekeeping
The Model 8821 normally accumulates Universal Time (UTC). By command, this may be changed to local time. When local time is used, automatic daylight savings time adjustments are made at preprogrammed dates. Leap second and leap year adjustments are made automatically. Time is available on the RS-232 ports with a resolution of one millisecond.

IRIG B Output

Format:	Modulated IRIG B 122
Level:	3 Vpp nominal
Drive:	Will drive 50 ohms
Mod. Ratio:	Adjustable 2:1 to 6:1
Phase:	Modulated code on-time mark adjustable to within ± 10 µs of on-time reference.

Rate/DC Code Output

Frequency:	One of the following may be selected: 1 PPH, 6 PPH, 12 PPH, 1 PPM, or 1 PPS - 1 MPPS in decade steps. IRIG B DC may be outputted in place of a selected rate via internal strap.
Levels:	TTL
Drive:	50 ohms.
Coherence:	Within one microsecond of UTC
Connector:	BNC

1 PPS Output

Levels:	TTL
Drive:	50 ohms
Coherence:	Within one microsecond of UTC
Connector:	BNC

High Rate Output

Frequency:	5 or 10 MPPS by internal strap
Levels:	TTL
Drive:	50 ohms
Coherence:	Phase coherent to 1 PPS
Connector:	BNC

Option Sinewave Rate Output
5 or 10 Mhz sinewave into 50 ohms in place of TTL rate above. 1 VRms o/p

Status Output
Three contacts of a form-C relay provide tracking status output on a 9-pin connector. Contact rating is 1/2 A. Also on this connector is status at TTL logic levels.

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Remote Setup and Status
The following is a partial list of setup and status commands via the RS-232 Port.

Set/Request UTC/LOCAL
Set/Request local time offset
Set/Request daylight savings dates
Set/Request satellites to be used (default is automatic selection)
Set/Request output rate
Set/Request local position
Set/Request AUTO/DYN/FIXED nav. mode
Set/Request minimum tracking elevation
Request time output
Request navigation data
Request tracking/locked status
Request time offset data
Request leap second status
Request satellites being tracked
Request firmware version

Time/Status Display (option)
The unit can be ordered with an LED display of time and status.

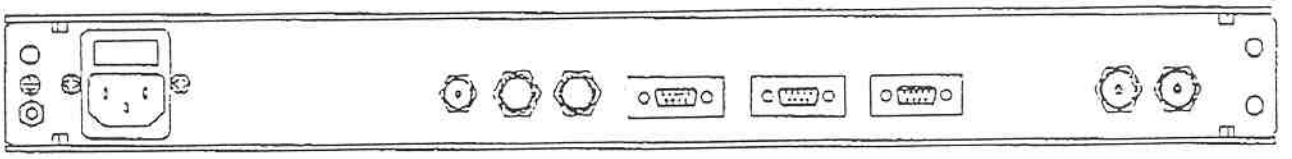
Power Supply
The unit operates on 85-265 Vrms, 48-440 Hz, or 100-370 Vdc. Power required is 25 watts nominal.

Internal Battery
An internal lithium battery maintains setup data and coarse timekeeping during time that no external power is applied.

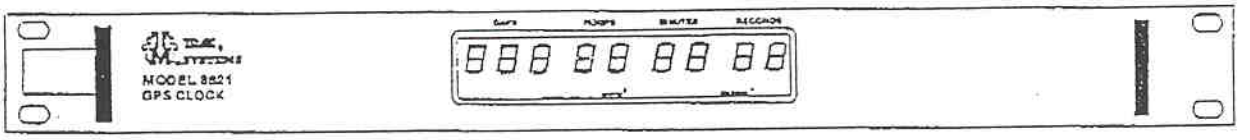
Physical
Chassis is 19" wide X 1.72" high X 14" deep. Weight is 9 pounds.

Antenna unit is 4.25 inches in diameter X 6.5 inches high. Weight is 7 ounces. It is connected to the main chassis via a coaxial cable. A 50 foot cable with TNC connectors is supplied. Optional lead-in systems with coaxial cables and in-line amplifiers are available to 2500 feet. Refer to application note AN-3A for complete details.

Temperature
Main unit:	-10 to + 50° C
Antenna:	-40 to + 70° C



Model 8821 Rear Panel



Model 8821 with Display Option

Specification subject to change without notice.

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