

Time and Frequency GPS Clock Model: 8835



Application - Defense (Military) • SatCom • Wireless

- Range Timing
- Base Station Synchronization (GSM & CDMA)
- Simulcast Systems
- DAB / DTV
- Network Time Synchronization
- Test and Measurement Systems

Features:

- GPS Referenced Time and Frequency
- Ovenized Crystal or Rubidium oscillator options
- Stratum 1 accuracy
- Compact Form Factor
- 10 / 100 base-T Ethernet Port
- Network Timer Sever
- SNMP
- 24VDC, 48VDC, and AC Power Input Options
- Rack Mountable



Description:

The Model 8835 GPS Time and Frequency Clock incorporates a 12-channel GPS receiver, disciplined double oven crystal, or rubidium oscillator options, time and frequency signal generation, in compact form factor enclosures. The rubidium oscillator option provides longer holdover capability when no satellites are tracked. Outputs include 1 PPS, 10 MHz or optional 5 MHz and time.

While tracking GPS, a propriety discipline algorithm steer oscillators to < 50 nanoseconds RMS accuracy to UTC and, with the rubidium oscillator option, a long term frequency stability of < 2×10^{-11} 24-hour average and 1 PPS holdover < ± 2 microsecond in 24 hours.

Control, status and time are available through RS-232 I/O and Ethernet interfaces. The Ethernet interface provides a variety of network protocols including NTP, SNMP, Telnet, SSH and FTP.

Three input power options are available to meet a variety of installations. These include 24VDC, 48VDC and 100-240 VAC with an external AC/DC power supply.

Specifications subject to change without notice.

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Specifications:

Oscillator Parameters	10 MHz DOCXO Standard Models 8835-1 & 2	5 MHz DOCXO Optional Model 8835-4	10 MHz Rubidium Optional Model 8835-3
Frequency accuracy while tracking GPS	<1 X 10 ⁻¹² (24-hour avg)	<1 X 10 ⁻¹² (24-hour avg)	<1 X 10 ⁻¹² (24-hour avg)
Frequency accuracy in holdover	<1 X 10 ⁻¹⁰ / day	<1 X 10 ⁻¹⁰ / day	<2 X 10 ⁻¹¹ / day
1 PPS accuracy while tracking GPS	< 50 nanoseconds RMS to UTC	< 50 nanoseconds RMS to UTC	< 50 nanoseconds RMS to UTC
1 PPS drift in holdover (after 72 hours locked to GPS)	<±10 microseconds in 24 hours	<±10 microseconds in 24 hours	<±2 microseconds in 24 hours
Harmonic distortion	-30 dBc	-30 dBc	-30dBc
Spurious	-80 dBc	-80 dBc	-80 dBc
Phase noise, 10 Hz offset	-110 dBc	-115 dBc	-90 dBc
Phase noise, 100 Hz offset	-135 dBc	-135 dBc	-128 dBc
Phase noise, 1 kHz offset	-145 dBc	-145 dBc	-140 dBc
Phase noise, 10 kHz offset	-150 dBc	-150 dBc	-148 dBc
Phase noise, 100 kHz offset	-150 dBc	-150 dBc	-148 dB

GPS Receiver

Frequency: L1 (1575.42 MHz) C/A code
Channels: 12 independent, continuous tracking
Acquisition Time: < 5 minutes cold start
External Gain: 18dB to 36dB
Antenna Power: +5VDC (5 - 80 ma)
Connector: TNC

1 PPS Output

Waveform: 400 microseconds, ± 1microseconds pulse, positive edge synchronized to UTC
Level: TTL into 50 ohms
Accuracy to UTC: < 50 nanoseconds RMS
Connector: BNC

10 MHz Output (5 MHz Optional)

Waveform: Sinusoidal
Level: +13dBm, ± 2dB into 50 ohms
Connector: BNC

IRIG-B (optional)

IRIG-B002
IRIG-B122

Com Port

Signal levels: RS-232
Baud rate: 9600
Protocol: 1-start bit, 8-data bits,
1-stop bit, no parity
Connector: 9-pin female D type

Ethernet Port

Interface: 10 / 100 Base T
Protocols: Telnet, SSH, FTP, SNMP and NTP
Connector: RJ-45

Power Input

24 VDC option: (18 to 36 VDC)
48 VDC option: (36 to 72 VDC)
DOCXO options: 15 watts at power up
7.5 watts steady state
Rubidium option: 23 watts at power up
12.5 watts steady state

AC/DC Power Supply Option

+15 VDC input from an external AC/DC power supply.
Note: AC/DC power supply is rated for 0°C to +40°C

Environmental Temperature

Operating: -30°C TO +60°C
Storage: -45°C TO +85°C
Humidity: 95% non-condensing

Physical

Dimensions: 5" L x 4.04" W x 1.6" H (crystal oscillators)
10.4" L x 4.04" W x 1.6" H (Rb oscillator)
Weight: Approximately 1.5 lbs
Mounting: # 6-32 screw holes in base
Optional Mounting: 1U rack mounting adapter

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