

GPS Clock - Time and Frequency - Model: 8835-8MG & 3MG



Features

- GNSS/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
- 48VDC and AC Power Input Options
- Rack Mountable with optional Mounting Tray, Part No. P002524
- RoHS Compliant

Description

The Model 8835 GPS Time and Frequency Clock incorporates a 72-channel GNSS/GPS receiver, disciplined 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, 5 MHz and composite.

While tracking GPS, a proprietary 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 HTTP.

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

Application Defense (Military) SATCOM - Wireless

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



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Oscillator Parameters	10 MHz OCXO 8835-8MG	10 MHz Rubidium 8835-3MG
Frequency accuracy while tracking GNSS/GPS	<1 X 10 ⁻¹² (24-hour avg)	<1 X 10 ⁻¹² (24-hour avg)
Frequency accuracy in holdover	<1 X 10 ⁻¹⁰ / day	<2 X 10 ⁻¹¹ / day
1 PPS accuracy while tracking GNSS/GPS	< 50 nanoseconds RMS to UTC	< 50 nanoseconds RMS to UTC
1 PPS drift in holdover (after 72 hours locked to GNSS/GPS)	<±10 microseconds in 24 hours	<±2 microseconds in 24 hours
Harmonic distortion	-30 dBc	-30 dBc
Spurious	-80 dBc	-80 dBc
Phase noise, 10 Hz offset	-110 dBc	-90 dBc
Phase noise, 100 Hz offset	-135 dBc	-128 dBc
Phase noise, 1 kHz offset	-145 dBc	-140 dBc
Phase noise, 10 kHz offset	-150 dBc	-148 dBc
Phase noise, 100 kHz offset	-150 dBc	-148 dB

GNSS/GPS Receiver

Frequency: L1 (1575.42 MHz) C/A code
Channels: 72 independent, continuous tracking
Acquisition Time: < 5 minutes cold start
External Gain: 15 min, 50 dB max
Antenna Power: +5VDC (5 - 50 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

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

5 MHz Output

Waveform: 5 MHz TTL 50% duty cycle
Level: TTL into 50 ohms
Connector: 9-Pin Female D Type

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

Composite Output

Waveform: Combined 5 MHz and 1 PPS Signal
25% Duty Cycle with One 75% Duty Cycle at the 1 PPS epoch
Level: TTL into 50 phms
Connector: 9-Pin Female D Type

AC/DC Power Supply Option

+15 VDC input from an external AC/DC power supply.

Ethernet Port

Interface: 10 / 100 Base T
Protocols: Telnet, SSH, FTP, SNMP and NTP
Connector: RJ-45
(Note: the "Connector: 9-pin female D-type" line originally under Ethernet Port has been struck through/removed)

Power Input

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

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 OCXO; 2.2 lbs Rubidium
Mounting: # 6-32 screw holes in base
Optional Mounting: 1U rack mounting adapter



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