

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 50-channel 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 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 X 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.

| Oscillator Parameters | 10 MHz OCXO 8835-8M | 10 MHz Rubidium 8835-3M |
|--|---|---|
| Frequency accuracy while tracking 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 GPS | < 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 | <±2 microseconds in 24 hours |
| Harmonic distortion | -30 dBc | -30dBc |
| 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 |

GPS Receiver

Frequency: L1 (1575.42 MHz) C/A code
 Channels: 50 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

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 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

Ethernet Port

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

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

AC/DC Power Supply Option

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

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