Symmetricom

StarLite

Precision GPS Time & Frequency Reference for OEMs

KEY FEATURES

- Provides 10 MHz & 1PPS Synchronized to GPS
- Custom Form Factor Frequencies Available

APPLICATIONS

- Stratum 1 Accuracy (<1E-12)
- Celluar Base Station (CDMA, TDMA, and UMTS)
- Fixed Wireless (MMDS, LMDS, and Wireless Local Loop)
- Broadcast (DVB, DAB, and DTV)
- Asset Location, E911

INTRODUCTION

StarLite is Symmetricom's smallest GPS disciplined time and frequency reference. With the StarLite, Symmetricom has taken the popular StarLoc architecture and optimized it for OEM applications. Size, part count and cost have all been reduced without sacrificing the industry leading performance and reliability of the design. Meanwhile, ease of integration has been improved by providing the user with form factor, connectorization and input voltage options tailored for OEM requirements.

Using Symmetricom's proprietary Snapshot™ technology, a network of StarLite units is able to lock system time to within 20 nsec (RMS) of each other. After a quick initial survey, only one GPS satellite need be visible in order to maintain system accuracy. This is especially important in a crowded urban environment that lacks antenna locations with an unobstructed view of the sky. Another helpful and advanced feature is the T-RAIM (time-receiver autonomous integrity monitoring) algorithm we have incorporated to monitor the health of individual GPS satellites. This algorithm assures that timing and position information from a malfunctioning satellite is not used, thus preventing it from negatively affecting your system's accuracy.

Contact Symmetricom to discuss your specific requirements. Discover how our StarLite, or another of the many precision timing and frequency products designed and manufactured by Symmetricom, can enhance your applications.

FIG.1 StarLite

StarLite Specifications

ELECTRICAL SPECIFICATIONS

- Inputs: L1 GPS (1575.42 MHz) C/A code (from GPS antenna); 12 or 15 Vdc ±5%; 12W Max 7.5W Steady State
- Outputs: 1 PPS TTL @ 50Ω; 10 MHz Sine @ 50Ω (coherent with 1 PPS); 13 dBm ±2; +5V@80 ma for antenna Amp.; TTL output for GPS time/status alarms
- Timing Accuracy: ≤20 nsec RMS between units over any 20 minute interval (under limited temp. variations); ±1 sec programmable offset from GPS in 17nsec steps
- Frequency Accuracy: <1E-12 (24 hour average); <1E-10 (Instantaneous)
- Phase Noise:

1 Hz	<-82 dBc/Hz
10 Hz	<-120 dBc/Hz
100 Hz	<-140 dBc/Hz
1 KHz	<-145 dBc/Hz
10 KHz	<-150 dBc/Hz
100 KHz	<-150 dBc/Hz

- Holdover[1]: <1 micro sec over 2 hours; <100 nsec over 30 minutes of time.
- Spurious: Harmonic: <-30 dBc; Non-Harmonic: <-80 dBc
- Communication Protocol: Symmetricom Serial Binary Interface Protocol (TTL Levels)

  Messages Handling: Configuration; Calendar Date and Time to 1 sec; Receiver Location; Alarming

ENVIRONMENTAL SPECIFICATIONS

- Operating Temperature: -10°C to +65˚C
- Storage Temperature: -40°C to +85°C
- Operating Altitude[2]: Operating: -200 ft to 40,000 ft. (12,200 meters)
- Operating Humidity: ≤90%, Non-condensing

PHYSICAL SPECIFICATIONS

- Size: 4" L X 3.25" W X 1.1" H
- Weight: 5 ounces
- Antenna Input: SMB
- Power Input: Molex 3 pin header (PN 22-23-2031)
- Outputs: 1 PPS and 10 MHz: MCX connectors, Comm port: Molex 4 pin header (PN 22-23-2041)
- Warranty: 1 year (Consult factory for extended warranty)

[1]Holdover refers to operation without GPS signals after an initial period of 8 hours of proper GPS reception

[2]Maximum operating temperature derated above 5,000 feet (1,525 meters)

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