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Find the *Microsemi / Symmetricom / TrueTime 142-400-50* at our website: *Click HERE*

XL-DC



Model XL-DC

High-Precision GPS Synchronized Time and Frequency Receiver

- Less than 40 nanoseconds rms accuracy to UTC during Selective Availability (SA)*
- Better than $1x10^{-12}$ frequency accuracy
- Versatile and modular architecture
- Supports many different output options
- 1 PPS output
- IRIG-B time code output
- Internet/local network remote control option

The ultra precise XL-DC provides the highest degree of time and frequency accuracy available in a GPS timing receiver. Standard outputs include a 1 PPS, analog IRIG-B time code and serial I/O time strings. A major advantage of the XL-DC is its versatile and modular architecture. A wide range of time and frequency plug-in options allow the XL-DC to be customized for specific applications and easily upgraded at a later time.

TrueTime's proprietary multi-satellite ensembling techniques provides very stable and precise timing outputs. Timing accuracy is less than 40 nanoseconds rms to UTC even during Selective Availability (SA). This superior oscillator disciplining to GPS enables internal oscillator accuracy to better than $1x10^{-12}$. For applications requiring increased oscillator stability during GPS outages, the XL-DC can be upgraded to include ovenized quartz or rubidium oscillators.

The very modular backplane architecture supports multiple time and frequency output options to address specific needs. The standard model supports up to four single-height plug-in modules. Using the optional 3.5" high chassis, the XL-DC can accommodate up to ten single-height modules. These modules can be incorporated at any time and significantly increase the adaptability of the XL-DC to changing requirements.

The option modules are a cost-effective way to create a very versatile clock to support different applications beyond those supported by the standard outputs. For example, adding the Network Time Server and Telecommunications modules allow the XL-DC to synchronize computer clocks across an Ethernet network as well as routers, multiplexers, switches and other telecommunications equipment that use T1 signals. Option modules can also increase signal distribution. Additional sinewave or time code modules can eliminate the need for other signal distribution chassis. The wide range of options lends itself well to configuring the XL-DC as the central time and frequency source for many applications commonly found in the laboratory, range, and enterprise environments. See the Options section for a complete list of options.



Rear panel of standard XL-DC with plug-in option bays.

TRUETIME

Specifications: XL-DC

Receiver/General

Timing Accuracy UTC/USNO: <40 ns rms (150 ns peak) with Selective Availability (SA) and tracking 8 satellites.*

Receiver Input: 1575 MHz L1 C/A code.

Tracking: Eight parallel channels. Multi-satellite ensembling with system integrity monitoring.

Position Accuracy: Latitude, longitude, and altitude within 10 meters, referenced to WGS84, after completing of 24-hour initialization position averaging.

Acquisition Time: Warm start (has ephemeris data and position) typically <2 minutes. Cold start typically less than 20 minutes.

Internal Oscillator:

Accuracy: $<1x10^{-12}$ when tracking satellites.

Stability: $1x10^{-9}$ at 1 second.
$3x10^{-10}$ at 100 seconds.
$1x10^{-12}$ at one day.

Stability when Not Tracking Satellites: $2x10^{-6}$ over 0°C to +50°C

Antenna: L1, GPS, 40 dB. RG-59/U cable, 50' (15 m) supplied; maximum cable length 150' (46 m). For longer cable runs, see Options.

Timing Outputs

1 PPS Output: TTL into 50 ohms, rising edge on time. 20-microsecond pulse width. Rear panel BNC.

IRIG-B Output: 1 kHz amplitude modulated carrier. 3 Vpp high, into 600 ohms. Rear panel BNC. DC level shift format optionally available.

Serial I/O: Bidirectional port at RS-232 levels.

Mechanical/Environmental

Receiver:

Power: 95-260 Vac, 47 to 440 Hz, <15 watts.
Size: 1.75" x 17" x 10.38" (4.4 cm x 43.2 cm x 36.4 cm).
Operating Temperature: 0°C to +50°C.
Storage Temperature: -40°C to +85°C.
Humidity: To 95% noncondensing.

Antenna:

Size: 3" Dia. x 3" H (7.62 cm x 7.62 cm).
Operating Temperature: -55°C to +85°C.
Storage Temperature: -55°C to +85°C.
Humidity: To 95% noncondensing.

Certification: UL, FCC, CE, C-UL.
Contact TrueTime for the certification of specific options.

Alphanumeric Front Panel Display: Initialization parameters, time of year, as well as alarm/status messages may be viewed on the 2-line, 32-character LCD.

Keypad: 0–9; up, down, left, and right arrows; CLR, FUNC/ENTR, TIME, STATUS, POSITION.

Serial I/O: Full user-selectable RS-232 communication protocol up to 19200 baud.

Front Panel Time Display: LCD type, 10 digits, 1 line. Default is time-of-year.
Size: 6.9" x 0.85" (17.53 x 2.16 cm).

Options (See Options pages for complete details.)

- *Network Time Server*
- *Telecommunication Interface: Primary Reference Source 1.544 Mbps (T1) or 2.048 Mbps (E1), Status/Alarm*
- *1, 5, 10 MHz Frequency Outputs*
- *Multiple Time Code Outputs*
- *Selectable Output Pulse Rates*
- *N.8 Data Rate Outputs*
- *Low Phase Noise Frequency Outputs*
- *Oscillator Upgrades*
- *External Oscillator Control*
- *Network Interface Card for Telnet Remote Control*
- *Frequency Measurement*
- *Time Interval/Event Timing*
- *Precision Time and Time Interval Interface (PTTI)*
- *Have Quick II*
- *Video Time Inserter*
- *Parallel BCD*
- *3.5" height, 10 option bay chassis*
- *AC/DC Power Input: 95-260 Vac/18-36 Vdc; 95-260 Vac/36-72 Vdc; 110 or 220 Vac/10.5-32 Vdc*
- *IEEE-488 Interface*
- *GPS Antenna Down/Up Converter for long cable runs. Contact TrueTime for application-specific details.*
- *Fiber Optic Antenna Link (up to 2 km)*
- *Frequency and Time Deviation Monitoring*
- *Differential GPS Mode (RTCM-104): 3 to 5 meter positioning*
- *Loss of Lock Alarm*

* 100 ns without Selective Availability (SA) implemented.

Specifications subject to change without notice.

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