ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Teradyne / LitePoint / ZTEC Instruments ZT1000PXI-GPS* at our website: *Click HERE*

GPS Time, Frequency and Synchronization

ZT1000PXI

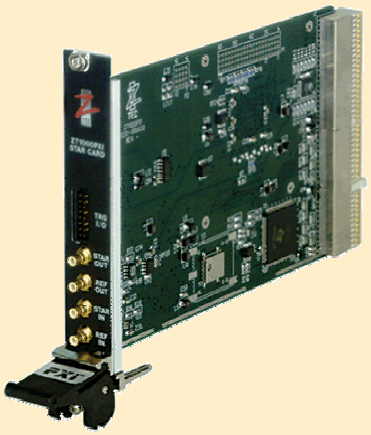
- Precision OCXO timebase
- Fast star trigger input
- Flexible PXI trigger routing
- Multiple PXI module synchronization
- Multiple PXI chassis synchronization, with or without cables (GPS option)
- GPS event time stamping
- GPS option also includes Direct Digital Synthesizer (DDS) sine wave output

Calibration Certificate Included

Command Interface
- ZTEC Command
- Register

Driver Software
- Plug-and-play with example program library

Applications
- Field service and maintenance
- Distributed or mobile data acquisition
- Large channel count test and measurement systems
- Mixed signal test



Overview

The ZT1000PXI provides an improved frequency standard and control of the PXI star trigger (Slot 2) and the PXI triggers. The improved trigger capabilities allow PXI instruments to be synchronized together and for additional synchronized chassis to be added to the test system. When fitted with the GPS option, the frequency reference can synchronized to the GPS network. Trigger events can be tagged with information identifying to within 25 ns of when they occurred in universal time. The ZTX1000PXI is an ideal way of improving the accuracy of your PXI instruments, instrument synchronization and unambiguous event recording.

Frequency Standard

The ZT1000PXI provides a precise 10 MHz timebase for PXI instruments that require accurate frequency references. The typical PXI chassis provides reference crystals with accuracies of only 100 ppm. The ZT1000PXI OCXO improves the accuracy 0.01 ppm over the entire operating temperature range. With the GPS option the accuracy is further improved to a virtually zero-drift standard requiring no routine calibration.

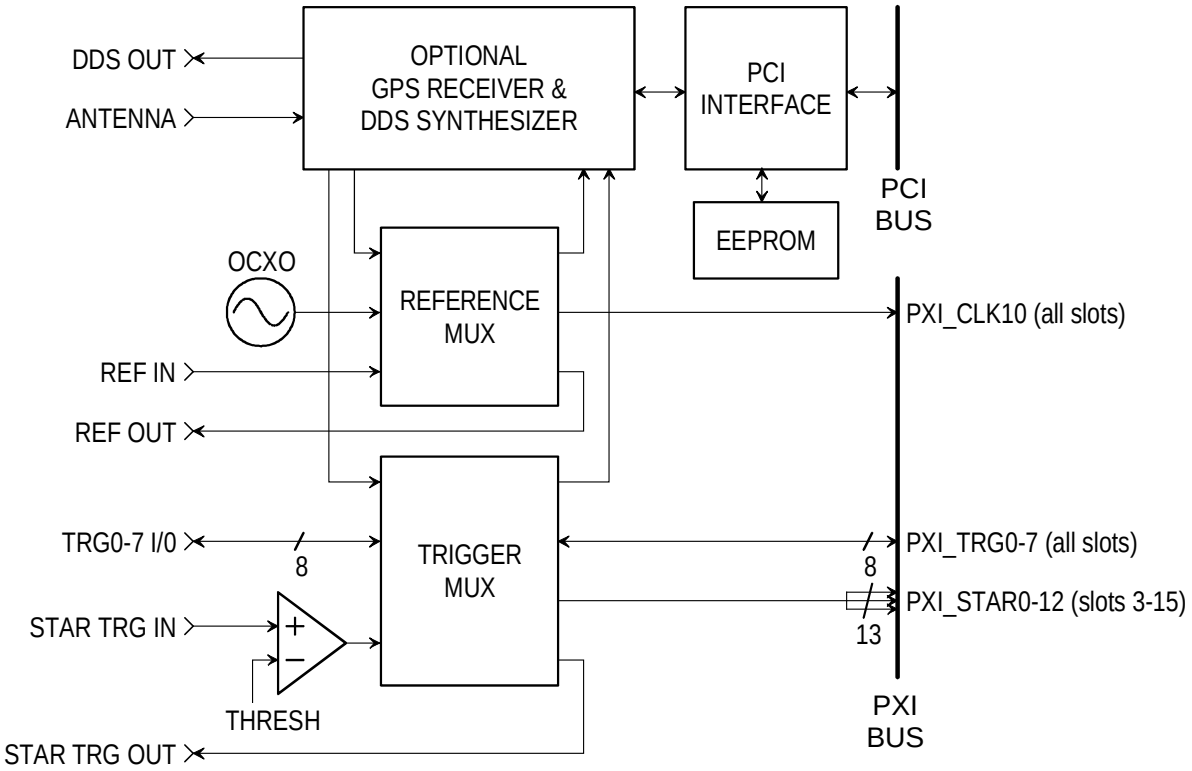


Figure 1: *ZT1000PXI block diagram*

Star and Trigger Routing

The ZT1000PXI generates or receives trigger signals for the thirteen PXI star triggers and the eight PXI triggers. Triggers can be generated or received either by the PXI backplane or through the front panel connectors.

The thirteen PXI backplane star trigger drivers are matched to provide equal-length, minimum latency delays to as many as 13 instruments in a PXI chassis.

The eight PXI (non-star) triggers are multiplexed in a cross-point switch to provide flexible trigger routing between the backplane triggers, the front panel, and the on-board timer.

Fitting a ZT1000PXI card into each chassis allows synchronization of measuring systems requiring more than one PXI chassis.

GPS Option

In addition to disciplining the frequency standard for better than 0.001 ppm accuracy, the GPS option supplies continuous time, position and velocity information. Up to five trigger events can be tagged with accurate timing information so their source can be established. Up to six trigger outputs can be generated at precise times or intervals to start measurement events with other instruments. A standard one pulse-per-second or 1 pulse-per-millisecond on-time mark output is provided for synchronizing external devices.

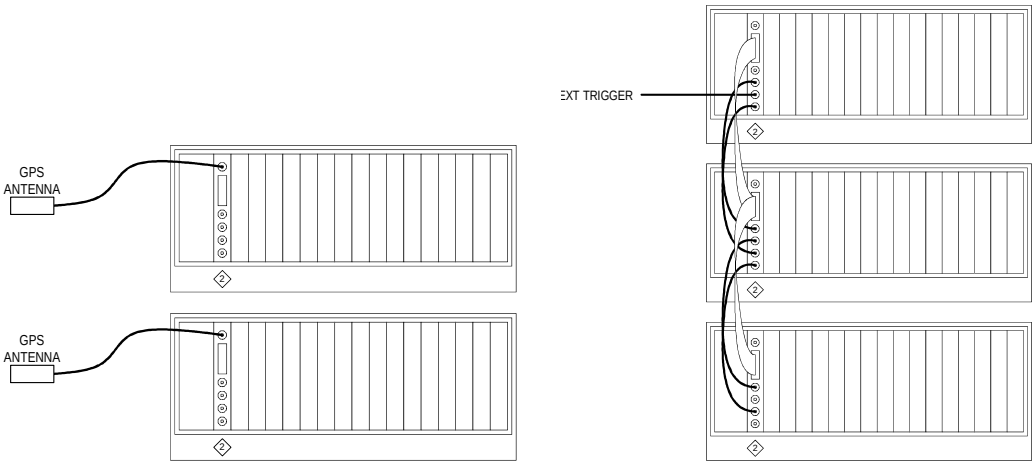


Figure 2: *Synchronization of multiple PXI chassis using GPS (left) vs. cabling (right)*

GPS Option (continued)

Multiple chassis can be synchronized to GPS without the use of cables by generating trigger events at precise times. The GPS option also provides a direct digital synthesizer output that can be used to generate a programmable frequency sinusoidal up to 10 MHz that is phase-locked to the GPS timebase reference.

Driver Software

The ZT100PXI is delivered with plug-and-play drivers that can be used in most application programming environments, such as LabVIEW, LabWindows/CVI, Visual Basic, and C/C++. An extensive example program library is provided to show various implementations of the driver using both LabVIEW and C.

Instrument control can also be achieved using an intuitive command interface. In addition, register level access is also supported to provide high speed data transfers and flexible integration into non-standard operating environments.

Ordering Information

Standard Configuration	
PXI	ZT1000PXI-00
Options	
GPS	ZT1000PXI-01
Accessories	
GPS Patch Antenna	ZT2000ANT-00
GPS Rooftop Bullet Antenna	ZT2001ANT-00
8 cm SMB to BNC Female	ZTSMBBNC-00
1 m SMB to BNC Male	ZTSMBBNC-01
Services	
Extended warranty	ZTEXTPXI-00
Calibration	ZTCALPXI-00

GPS Time, Frequency and Synchronization

Performance Characteristics

10 MHz PXI System Reference

Internal Source	OCXO
External Sources	External Input PXIbus Chassis Reference
Initial Accuracy	OCXO, ±0.001 ppm
Thermal Stability	OCXO, ±0.01 ppm, 0-50°C
SSB Phase Noise	-120 dBc/Hz @ 10 Hz offset -150 dBc/Hz @ 100 Hz offset -160 dBc/Hz @ 10 kHz offset
OCXO Aging	0.1 ppm/year 0.001 ppm/day

GPS Disciplining (GPS Option)

Initial Accuracy	Adjusted by GPS to <±0.001 ppm
Thermal Stability	Adjusted by GPS to <±0.001 ppm
Aging	Adjusted by GPS to <±0.001 ppm

10 MHz Reference Input

Frequency	10 MHz ± 100 ppm
Maximum Level	±5V maximum
Nominal Level	sine wave: +10 dBm to -10 dBm square wave: ±0.1 to 1V, 50% duty
Input Impedance	50 Ω
Connector	SMB

10 MHz Reference Output

Frequency	10 MHz
Source	Phase-locked to selected timebase
Output Level	TTL level into 50 Ω
Connector	SMB

Star Trigger In

Functionality	1 input to 13 matched delay PXI backplane drivers
Input Level	±5V maximum Programmable threshold level 0.5V minimum detectable change
Input Impedance	50 Ω
Maximum Delay	5 ns to PXI_STAR 20 ns to PXI_TRIGn
Connector	SMB

Star Trigger Out

Functionality	Buffered PXI_STAR
Output Level	TTL level into 50 Ω
Connector	SMB

Trigger I/O

Functionality	8 bi-directional triggers
Signal Level	TTL level input and output
Input Characteristic	10k Ω pull up to 3.3V
DC Characteristics	Sync 8 mA, source 4 mA (drive 600 Ω)
Maximum Delay	20 ns to PXI_STAR 20 ns to PXI_TRIGn
Connector	16-pin, 2mm header Each trigger has a paired signal ground and can be terminated for controlled impedance applications

GPS Information (GPS Option)

Time	Universal Coordinated Time (UTC)
Time Accuracy	±25 ns
Time Resolution	25 ns
Location	Longitude, Latitude, Altitude
Location Accuracy	25 m, Circular Error Probability 50% 2 m, CEP 50% (differential lock)
Velocity	East, North, Up
Velocity Accuracy	0.1 m/s 0.05 m/s (differential lock)
Cold Start-Up	<5 minutes (90%)
Warm Start-Up	<2 minutes (90%)

GPS Timestamp Input (GPS Option)

Functionality	5 Timestamp of Event Inputs
Sources	PXI_STAR, PXI_TRIGn, Star Trigger In, Trigger I/On
Edge	Rising, Falling or Both
Time Resolution	25 ns
Event Storage	1024 events, first-in first-out queue

GPS 1 PPS/1 kHz Output (GPS Option)

Functionality	1 pulse-per-second/1 pulse-per-ms On-Time Mark, 1 Hz or 1 kHz
Output Routing	PXI_STAR, PXI_TRIGn, Star Trigger Out, Trigger I/On
Polarity	On-Time Rising Edge
Pulse Width	500 µs

GPS Timed Trigger Output (GPS Option)

Functionality	6 Trigger Pulse Outputs
Edge Time	Leading Edge Time Programmable (UTC & minor time)
Time Resolution	25 ns
Pulse Width	1 ms
Output Routing	PXI_STAR, PXI_TRIGn, Star Trigger Out, Trigger I/On
Polarity	Normal or Inverted Pulse

GPS Periodic Output (GPS Option)

Functionality	2 Periodic Trigger Outputs
Output Routing	PXI_STAR, PXI_TRIGn, Star Trigger Out, Trigger I/On
Duty Cycle	50%
Period	209.7152 ms to 50 ns
Time Resolution	25 ns

Direct Digital Synthesizer Output (GPS Option)

Frequency	DC to 10 MHz sine wave output, 0.009 Hz resolution
Timebase	Phase-locked to selected timebase
Output Level	+10 dBm ($2V_{pp}$) into 50 Ω
Connector	SMB

PXI Interface

PCI Interface	33 MHz, 32 bit address, 16 bit data
PCI Voltage	Universal, +3.3V or +5V
PCI Compatibility	Version 2.2
PXI Signals	PXI_TRIGn input/output selectable Thirteen PXI_STAR outputs 10 MHz reference output selectable Left and right side buses not used

Physical and Environmental

Physical size	Single slot, 3U CompactPCI/PXI

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP