PTP800

Quad-Port Enterprise-Class PTP Server

The PTP800 provides highly accurate yet economic time distribution over local area networks (LAN) using Precise Time Protocol (PTP), the industry-standard means of time distribution over discrete networks.

Features

- Economic quad-1Gbe combo port Network Time Server
- Four independent PTP Grandmaster ports
- Can act as both an NTP stratum 1 server and client
- 5000 time requests per second
- Highly configurable PTP to provide compatibility with many PTP profiles.
- Precision timing circuits ensure holdover stability in event of synchronization signal interruption
- Multiple holdover oscillator options
- Secure web interface for configuration
- Field upgradable
- Multiple dual redundant power supply options
- 'Reset defaults' function

Input Synchronization Signals

- GNSS, Active or Long Distance Antenna
- 1 PPS with Serial Time of Day
- IRIG-B, AC or DC
- NTP Client
- 10 MHz

Output Signals

- IRIG-B, AC or DC
- 1 PPS
- Serial Time of Day
- 10MHz

** Accuracy subject to Reference Clock and network conditions*

Applications

Enterprise / Corporate Networks

Any business using devices on a network can benefit from using the PTP800 - not only can it use a selection of highly accurate, trusted time sources, it is easily integrated into internal systems thus eliminating network security issues that arise from using an external time source, such as from the Internet.

Telecommunication / Broadcasting

Hardened dual redundant AC and DC power supplies options. Many PTP profiles are supported. Hardware timestamping allows for better than 1µs PTP client synchronization accuracy, dependant on network configuration and performance

Rail / Transportation

The ability to operate PTP in client mode means that the PTP800 is especially useful as a sub-master clock in rail applications.

Key Benefits:

- Accurate & reliable time data from a trusted source. Precision hardware PTP timestamping to 8ns
- Remote configuration and status via web browser, remote monitoring with SNMP
- Synchronization between users - eradicates
- discrepancies
- System time stamping, such as e-commerce transactions, e-mail sent & received, is highly accurate
- Automatic systems procedures such as backups occur at the correct time and in the correct order
- Additional time signal outputs can feed to other systems
- Multiple time source fall back and priority configuration can ensure high synchronization availability
- Various oscillator choices allow for long holdover to maintain time accuracy when synchronization signals are absent

2921 Daimler Street • Santa Ana • CA • 92705
+1 (714) 755-1050 • www.brandywinecomm.com • info@brandywinecomm.com

PTP800 Specifications

Connections

Four combo RJ45/SFP connectors for 10/100/1000 BASE-T networks

GNSS antenna either with 50Ω BNC socket or RJ45

IRIG-B input/output with 50 Ω BNC sockets. Independently supports IRIG-B000 to 0007, or B120 to B127

1PPS input/output (rising edge) with BNC sockets at 5V

10MHz sine wave input/output with BNC sockets at 5V RMS

micro USB-B port for support

Interface Standards

- PTP [IEEE 1588v2]
- NTP V3 [RFC 1305], V4 [RFC5905], SNTP V4[RFC 4330]
- SNMP V1[RFC1155/7], V2c[RFC1901/8], V3 [RFC 3411/8]
- Ethernet/ IEEE802.3
- IPv4 [RFC 791], IPv6[RFC2460, 8200]
- ICMP ping [RFC 792]
- SSH [RFC 4250-4254]
- HTTPS [RFC 7540]
- DNS [RFC 1034/5]
- FTP [RFC 765]

Configuration and Status

Secure web browser configuration of all Network, Protocol, Input and Output options. Stored in non-volatile memory

"Restore Defaults" button for factory reset

Web browser indicates status and system log

Status available through SNMP

9 Digit LED panel displaying Day and Time. Status LEDs to show synchronization status and power

User specific network parameters can be factory-configured upon request

All Ethernet ports available for upgrade of flash code for newer versions or additional options

Physical (stand-alone unit)

Size:	19-inch rack mounting 1U high 200mm deep
Weight:	10 lbs / 4.5 Kg
Power:	Dual redundant, hot swappable
AC Power:	90-264VAC 50-60Hz Load 20W (typical) subject to oscillator. Connection via 3 pin IEC plug
DC Power:	18-36VDC 36-72VDC
Isolation:	2250VDC Input-Output
Display:	9 digit display + 6 status LEDs

Environment (Operation & Storage)

Temperature:	-5°C to +50°C
Humidity:	up to 95% RH (non-condensing)
EMC:	CE compliant
Safety:	IEC 60950-1, CSA 22-2

Input Synchronization Accuracy (Rb and OCXO Options)

GNSS ±100 ns from UTC
IRIG-B AC ±2 µs
IRIG-B DC ±500 ns
PPS with Time of Day ±100 ns
NTP Client ±50 us from UTC, dependant on network
10MHz, unit will track the input signal if it has time

TCXO option – accuracies up to 10 times degraded

Frequency Stability:

Oscillator		Stability per °C	Performance while disciplined Averaging Time						Holdover accuracy at constant temperature after loss of reference		
									Time	Frequency	
Option	Description		1s	10s	100s	1000s	10000s	1 day	1 day	1 day	3 days
01	TCXO	$1.5x10^{-8}$	$2x10^{-9}$	$5x10^{-10}$	$5x10^{-10}$	$5x10^{-10}$	$6x10^{-11}$	$1x10^{-12}$	<2 ms	$<2.0x10^{-8}$	$<3.0x10^{-8}$
02	OCXO	$1.2x10^{-10}$	$3x10^{-10}$	$3x10^{-10}$	$4x10^{-10}$	$4x10^{-10}$	$5x10^{-11}$	$1x10^{-12}$	<60 µs	$<2x10^{-9}$	$<4x10^{-9}$
03	Rubidium	$7x10^{-12}$	$3x10^{-11}$	$8x10^{-12}$	$3x10^{-12}$	$3x10^{-12}$	$2x10^{-12}$	$8x10^{-13}$	<1 µs	$<1.0x10^{-11}$	$<1.5x10^{-11}$

N.B. Option 1 TCXO supplied as standard unless otherwise specified

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