

Features

Stand-alone NTP Time Server
Network Management Protocol
Advanced Remote Protection
Security Protection
Telnet and RS-232 Remote Programming
Independent Time Acquisition From:

- GPS Satellite
- IRIG Time Code
- Dial-up Time Service
- CDMA

1U Height, Rack Mount Unit
Convenient Front Panel Display
Versatile Input/Output:

- Ethernet 10BaseT
- IRIG B Time Code Input/Output
- 1 PPS TTL/CMOS Output
- 10 MHz Output



TIME CODE PRODUCTS

General, Airborne and Network

TymServe™ 2100 Network Time Server



Overview

Datum's TymServe™ 2100 Network Time Server acquires time from the GPS satellite constellation, IRIG Time Code or Dial-up Time Services (NIST, USNO) and distributes time using the TCP/IP Network Time Protocol, NTP. TymServe simplifies the task of implementing an enterprise network synchronization system, offers better timing accuracy, conserves WAN bandwidth, decreases security risk and provides lower cost of ownership.

Network managers and system integrators appreciate the fact that the TymServe is a complete time server in a convenient, self-contained rack mountable configuration. Configuration is simply a matter of entering the unit's IP address via either the front panel keypad or the RS-232

remote programming port. Network connections are supported with 10BaseT connectors. In addition, the unit has IRIG time code and 1 PPS reference inputs and outputs as well as one 10 MHz output. Network management tools include Simple Network Management Protocol (SNMP) with a custom MIB II extension, remote Telnet access, Dynamic Host Configuration Protocol (DHCP), Bootstrap Protocol (BOOTP) and MD5 access authentication.

The GPS configuration offers a revolutionary concept in network synchronization. GPS satellites continually pass overhead providing an easily accessible source of UTC time for each remote campus equipped with the TymServe. Therefore, it

is no longer necessary to synchronize these campuses over WAN links, consuming expensive bandwidth, degrading time accuracy, and introducing an extra security risk. Initial TymServe cost savings come from its simple configuration and installation relative to configuring a conventional workstation as a time server. Savings continue with reduced WAN traffic, elimination of workstation synchronization management, software upgrade costs, and avoiding corporate MIS cost allocations.

The TymServe 2100 Network Time Server simplifies network time synchronization implementation, offers higher performance and costs less.



Timing, Test & Measurement

Specifications



ELECTRICAL SPECIFICATIONS

Outputs

Time Code	BNC	IRIG B, Modulated 3:1, 3V p-p, 75Ω
	DB9	IRIG B, Differential TTL, DCLS, 50Ω
1 PPS	BNC	TTL, Rising edge on-time, 50Ω
Frequency	BNC	10 MHz, 50Ω (clock reference only)
		Square wave with VCXO
		Sine wave with OCXO and Rubidium

Inputs

Time Code	BNC	IRIG A, IRIG B, NASA 36 (Modulated 2:1 to 6:1) 500 mV to 10 V p-p, >10KΩ
	DB9	IRIG A, IRIG B, NASA 36 Differential TTL, DCLS, 1KΩ
1 PPS	HD-15	TTL, Active rising or falling
GPS	SMA	Antenna / Preamp

Input/Output Connections

Network	10BaseT	Ethernet
Serial Port A	RS-232 / DB9	DTE, Sysplex Timer, Ext. Modem
Serial Port B	RS-232 / DB9	DCE, Configuration and status

Front Panel

Front Panel Keypad	0 to 9, Menu
Front Panel Display	LCD, 2 x 40 character
Front Panel Indicators	LED, 'Locked', 'Tracking', 'Power'

Timing Accuracy

Network	1-10 milliseconds, typical
GPS	< 2 microsecond, relative to UTC
IRIG B and NASA 36 Time Code	<5 microseconds, relative to code input
Dial Up Service	<10 milliseconds, on sync

Oscillator Aging

VCXO (standard)	1E-8/day aging
OCXO (optional)	1E-9/day aging
Rubidium (optional)	5E-11/month aging

Note

IRIG B time code input support IEEE-1344 Leap Second, Year and Time Figure of Merit enhancements.

ENVIRONMENTAL & PHYSICAL SPECIFICATIONS

Power Requirements 95 to 265 VAC, 47 to 63 Hz

Dimensions

	Inches	Cm
Height	1.75	4.45
Width	17	43.18
Depth	12	30.48
Weight	<10 lbs	<4.5 kg

Operating Temperature 0° to 50° C

Relative Humidity 0 to 95% (non-condensing)

Supported Network Features

TCP/IP
NTPv2 (RFC 1119) & NTPv3 (RFC 1305) & NTPv4 (RFC 2030)
SNTP (RFC 1361)
Time Protocol (RFC 868)
SNMPv1 w/ Custom MIB II Extension
MD5 Authentication (NTP)
BOOTP, DHCP & TFTP
Telnet
NIST ACTS and USNO

GPS (optional)

GPS Receiver	Eight channel, C/A code
Antenna Size	3.04" d X 2.94" h 7.72cm X 7.47cm
Antenna Operating Temp.	-40° C to +85 °C
Acquisition	<5 minutes
Cable Type	50 ft; 15.25m / RG58

Options	Option P/N
• OCXO - Ovenized Crystal Oscillator (3E-9/day)	TS Opt 10A
• LPRO - Rubidium Oscillator (5E-11/mo)	GPS Opt 15A
• AC50 - 50' Bullet Antenna Cable (RG58)	TS Opt 20F
• 100-ft Belden 9913 Antenna Cable (N/N)	TS Opt 20A
• AC200 - 200' Belden 9913 Antenna Cable	TS Opt 20B
• AC300 - 300' Belden 9913 Antenna Cable	TS Opt 20C
• AC400 - 400' Belden 9913 Antenna Cable	TS Opt 20D
• AC500 - 500' Belden 9913 Antenna Cable	TS Opt 20E
• LTNG1 - Lightning Arrestor + 25 ft. Cable	TS Opt 23A
• LTNG2 - Lightning Arrestor + 50 ft. Cable	TS Opt 23B
• BIAST - Bias-T Filter (DC Block - factory installed)	TS Opt 24
• Rack Mount Slides	TS Opt 25
• BUANT - Bullet II Antenna (w/adapters)	TS Opt 26E
• HGANT - High-Gain Antenna	TS Opt 26B
• XFMEXT - External Transformer Input Option	TS Opt 27

NTP daemon Client Software

<http://www.eecis.udel.edu/~ntp/>
<ftp://ftp.udel.edu/pub/ntp>



Specifications subject to change without notice.