



TymServe 2100

Versatile GPS Network Time Server

KEY FEATURES

- Stand-alone NTP Time Server
- Network Management Protocol
- Telnet and RS-232 Remote Access
- Independent Time Acquisition From:
 - GPS Satellite
 - IRIG Time Code
 - Dial-up Time Service
- 1U Height, Rack Mount Unit
- Convenient Front Panel Display and Keypad
- Versatile Input/Output:
 - IRIG B Time Code Input/Output
 - 1 PPS TTL/CMOS Output
 - 10 MHz Output
 - Sysplex Timer Output
- MD5 Access Authentication for Security
- HTTP Status Page
- Rubidium Oscillator Upgrade
- Two-Year Warranty

Symmetricom's TymServe™ 2100 network time server acquires time from the GPS satellite constellation, IRIG Time Code or Dialup Time Services (NIST, USNO) and distributes time using the 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. 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 robust concept in network synchronization. GPS satellites continually provide an easily accessible source of high accuracy UTC time. Combining GPS with the standard IRIG B and ACTS dial up service the TymServe 2100 incorporates a solid time reference redundancy scheme. Couple this with an oscillator upgrade to an OCXO or Rubidium oscillator and the TymServe 2100 becomes a very stable and reliable source of time for your network.



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TymServe 2100 Specifications

ELECTRICAL & TIMING 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
1 PPS:	1 microsecond to input pulse
 - Oscillator stability

VCXO (standard):	48 milliseconds/day long term "flywheeling"
OCXO (optional):	5 milliseconds/day long term "flywheeling"
Rubidium (optional):	6.5 microseconds/month long term "flywheeling"
- Note: IRIG B time code input supports IEEE-1344 Leap Second, Year and Time Figure of Merit enhancements.

ENVIRONMENTAL & PHYSICAL SPECIFICATIONS

- Power requirements: 100 to 240 Vac, 50 to 60 Hz, <22 watts (including Rubidium oscillator if installed)
- 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°C to 50°C
- Relative humidity: 0 to 95% (non-condensing)

NETWORK PROTOCOLS

- NTPv2 (RFC 1119) & NTPv3 (RFC 1305)
- SNTP (RFC 1361)
- Time protocol (RFC 868)
- SNMP 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 7.72 cm x 7.47 cm
Antenna operating temp.:	-40°C to +85°C
Acquisition:	<5 minutes
Cable type:	50' (15 m)/RG58

CLIENT SOFTWARE

- An NTP client/daemon is required for client-side synchronization with any network time server, including the TymServe 2100. Included with the 2100 is Symmetricom's SymmTime™ NTP client for Windows 95/98/NT/2000/XP. Comprehensive time client, server & management software for easy distribution, management and monitoring of time across the network is also available.

PRODUCT INCLUDES

- TymServe 2100 Network Time Server, two-year warranty, power cord, manual, MIB II software, SNTP client software. GPS Option adds: L1 GPS antenna, 50' (15 m) RG-58 antenna cable, 1' (30 cm) antenna mast, two (2) mounting brackets.

OPTIONS

- OCXO - Ovenized crystal oscillator (3.0E-9/day)
- LPRO - Rubidium oscillator (5.0E-11/mo)
- AC50 - 50' (15 m) Bullet antenna cable (RG58)
- 100' (30m) Belden 9913 Antenna cable (N/N)
- AC200 - 200' (60m) Belden 9913 antenna cable
- AC300 - 300' (90m) Belden 9913 antenna cable
- GPS antenna down/up converter for cable runs to 1500' (457 m)
- LTNG1 - Lightning arrestor + 25' (7.5 m) cable
- LTNG2 - Lightning arrestor + 50' (15 m) cable
- -48Vdc Power supply
- Rack mount slides
- XFMEXT - External transformer input option
- NTP Network Time Displays

2" (5 cm), 6 digit, red LEDs
4" (10 cm), 6 digit, red LEDs



Rear View of TymServe 2100



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