

NETSYNCPLUS® PRR-10PLUS



POWERFUL GPS PRIMARY REFERENCE RECEIVER/SOURCE

Cost-Effective Stratum 1 Network Synchronization Solutions For Advanced Network/Central/Transit/Local/End Offices

- **✓ GPS Source: Up to 2 advanced GPS Engines**
- ✓ SynClockPlus™: Up to 2 Stratum 2E RubidiumPlus™ and/or Stratum 3E QuartzPlus™
- **✓** Performance: SmartHoldover^{Plus™} technology
- **✓** Output: Up to 52 DS1/E1, SSM, CC, 1/5/10 MHz, TOD
- ✓ Installation: Easy pre-cabled antenna kit







BEST NETWORK/TRANSIT/MO SYNCHRONIZATION

NETSYNCPLUS GPS SOURCE

The PRR-10 is an advanced Primary Reference Source based on the latest GPS integration technology. It's designed for telecom network operators to generate superior and highly reliable Stratum 1 synchronization signals for advanced networks.

KEY PRR-10 BENEFITS

Solution

- Cost-effective solution
- ✓ Full long-term investment protection
- ✓ Modular, flexible & redundant

Architecture

- ✓ Hot swappable modules
- ✓ Low maintenance cost
- Easy installation of the antenna
- Seamless integration of future requirements

GPS

- ✓ Single or dual GPS references
- Simultaneous tracking of multiple satellites
- ✓ UTC-traceable Stratum 1 signal
- ✓ High filtering of Selective Availability

GPS Antenna

- ✓ Up to 1000 ft/305 m cable
- ✓ Transient/Surge eliminator

SynClock

- ✓ Up to 2 Rubidium Plus and/or Quartz Plus
- External from any vendor's co-located TSG/SSU clocks

Output

- ✓ Single or redundant DS1/E1
- Sync Status Messaging (SSM) on DS1/E1 for self-healing networks
- ✓ 1/5/10 MHz (sine)
- ✓ Composite Clock/8kHz
- ✓ TOD (Time-Of-Day) through EIA-232 port
- ✓ Up to 12 DS1/E1 outputs in the main
- ✓ Up to 52 DS1/E1 outputs with both main and expansion units

Communication/Management

- ✓ EIA-232 port
- ✓ Embedded TL1 interface
- ✓ Interactive ASCII-based interface
- PC-based Q3/CMIP interface for powerful TMN management
- PC-based SNMP interface

Standards

- Compliance with the latest and new industry standards is guaranteed
- Compliance with critical EMC standards for interference protection

INDUSTRY STANDARDS COMPLIANCE

The PRR-10 is designed to meet the latest and evolving industry standards, including ITU-T, ETSI, EIA, ANSI, Telcordia/Bellcore, and CE/AS.

PRR-10 NETSYNCPLUS APPLICATIONS

The PRR-10 is designed to meet a broad range of requirements by simply changing the configuration of the unit. The key applications are:

- Network PRS (Primary Reference Source) for large offices with digital switches, multiplexers, cross-connect systems, SONET/SDH and ATM network elements
- Office PRS for upgrading any vendor's TSG/SSU that is configured with Stratum 2E/2/3E and Transit/Local clocks.
- Mobile/End office PRS for independent and reliable Stratum 1 timing signals

FLEXIBLE & REDUNDANT NETSYNC^{PLUS} ARCHITECTURE

The PRR-10 architecture is designed to accept the following modules in a flexible, fully redundant approach to seamlessly satisfy future requirements:

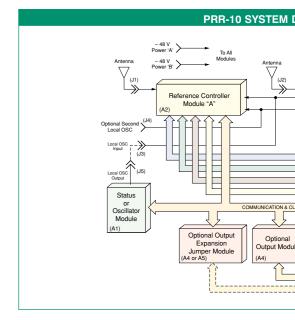
Single or dual GPS reference module

- □ Single or dual Rubidium^{Plus™} clock module (2nd module located in the expansion unit)
- Single or dual Quartz^{Plus™} clock module (2nd module located in the expansion unit)
- ☐ Single or dual external clocks from any vendor's co-located TSC/SSU.
- ☐ Single or redundant output modules (max. 10 outputs)
- Expansion unit: single or redundant output modules (max. 50 outputs)

INTELLIGENT NETSYNCPLUS MODULES



Each PRR-10 module integrates the latest hardware and software technologies for superior reliability, flexibility, and functionality. Modules can be removed or inserted while the unit is operating without any degradation of the output signals. Each module supports the management of critical, major, and minor alarms. Powerful management can be performed through the communication interface.



DBILE/LOCAL/END OFFICE ON SOLUTION



GPS^{Plus} Module

The GPS module utilizes an advanced multi-channel engine which simultaneously tracks all satellites above the horizon. Within 30 minutes of power-up, the GPS source automatically provides a fully UTC-traceable Stratum 1 output signal.

The GPS engine simultaneously ensembles the received carrier and code lock signals to filter out the effects of Selective Availability (SA). SA is further flattened through intelligent software.



SynClock^{Plus™} Module

This module is available in different versions to meet specific holdover requirements. The following SynClock technologies are supported for Stratum 2E/2/3E and Transit/local offices:

- Enhanced Rubidium^{Plus¹}
- Enhanced Quartz^{Plus™}
- Alternatively, external clocks from any vendor's co-located TSG/SSU can be fed to the PRR-10 for significant cost savings.

■ SmartHoldoverPlus™

In case of loss of GPS reference, the PRR-10 uses intelligent software to provide enhanced output performance beyond the SynClock's holdover stability.

Output^{Plus} Module

This module is available in different versions to meet specific requirements. The following output signals are supported:

- E1 (G.703/9 or G.703/13)
- DS1 (D4/SF or ESF)
- SSM quality status on DS1/E1
- Composite Clock/8kHz
- 1, 5, or 10 MHz (sine)

Comm^{Plus} SubModule

This submodule is integrated into the GPS module. Coupled with the optional NetSync^{Plus*} Manager software, the comm submodule provides powerful fault, configuration, accounting, inventory, performance, security, and other optional management functionality. It supports the following communication interfaces:

- Embedded TL1
- Interactive ASCII-based mode
- PC-based Q3/CMIP interface for powerful TMN management (optional)
- PC-based SNMP interface (optional)

NETSYNCPLUS SERVICES FAMILY

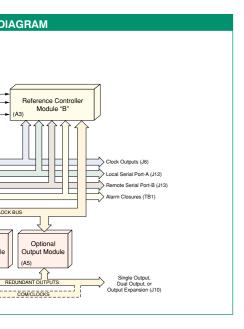
Extended NetSync services are provided to ensure our customer's success. Service programs include:

- Local 24-hour/day, 7-day/week support (phone, fax, email, web, and technician)
- Local inventory support
- NetSync design & planning
- NetSync installation
- NetSync commissioning & testing until acceptance
- NetSync maintenance

ONLINE DATA SUPPORT

Visit our web site today at **www.datum.com** for the latest information, including:

- NetSync application notes
- NetSync training
- NetSync seminar
- NetSync resources
- Q&A support
- Local and international Net-Sync experts



→ GPS PRR-10 TECHNICAL DATA

STANDARD FEATURES						
Frequency Stability (basic GPS mod						
Overall Performance	Stratum 1 PRS per ANSI T1.101-1994, Bellcore GR-2830-CORE, GR-1244-CORE, and ITU-T G.811					
External Holdover Clock	Externa	l clock(s) t	from any	vendor's	co-located TSG/SSU (si	ngle or dual input)
Outputs						
	■ 2 DS	51 or E1-C	G.703/9 o	n the rea	r panel	
	■ 1 TOD (Time-Of-Day) through EIA-232 port					
Warm-Up Time	Less tha	an 30 min	utes			
Communications						
Port	2 x RS-232 (Port 1 for craft interface; Port 2 for remote interface)					
Speed	Up to 19.2 kbps					
Language		TL1 and interactive ASCII-based mode Critical, Major, Minor (Visual, NO/NC relay contacts, and through EIA-232 p				
Alarm	Critical	, Major, N	linor (Visi	ual, NO/N	C relay contacts, and t	hrough EIA-232 p
Power Supply	20.	503// 40		1 22	/ .: I)	
Voltage DC Range		-38 to -59 V (-48 V nominal - positive/negative ground)				
Consumption	< 60 \	N, < 85 V	V with op	tional Ru	bidium ^{PlusTM Clock}	
Size and Weight	Size (H	Size (H x W x D)				
Receiver	5.25" x 19" x 12" (13.3 cm x 48.26 cm x 30.5 c 6.44" x 3.0" diameter (16.35 cm x 7.6 cm)					8 lbs (3.6 kg)
GPS antenna					7.6 cm)	7.2 oz (0.2 kg
Environmental						
EMC Compliance	FCC part 15 Class A & CISPR 22 Class A					
Operating temperature	Receiver: 0-50°					
6	Antenna: -40 to 75° C					
Storage temperature	Receiver: -20 to 75° C Antenna: -40 to 75° C					
Humidity	Receiver: 0 to 95% (non-condensing)					
	Antenna: 100% (not immersed)					
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PERFORMANCE COMPARISON WITH STANDARD MASKS

