



SETTING THE NEW  
STANDARD FOR THE  
NEXTGEN NETWORK



## Product Highlights:

- ITU Stratum 3E holdover with Network Time Protocol (NTP), Stratum 2 when locked to Peer
- Hardware based 100 Mbps wirespeed NTP processing
- Fully Redundant Peer-to-Peer
- Integrated Web Server
- Utilizes Power over Ethernet (PoE)
- Outdoor Temperature Hardened for the most severe environments
- Zero Footprint in Datacenter or Colocation site
- SNMP V3 Security, SSH and Telnet Support
- Secure Access
- Immune to Load Based Denial of Service attacks

## Uses:

- Synchronization of MGW, SGSN, GGSN, SMS and IMS nodes in wireless service provider networks
- Utility RTU switch synchronization
- Synchronization for real-time streaming of IPTV, IP radio and Voice over IP (VoIP)
- Storage backup and scheduling
- Reliable timing for legal and financial transactions per Sarbanes-Oxley, healthcare HIPAA compliance, datacenters
- Manufacturing process coordination
- Security camera synchronization
- Database synchronization

CXR Larus Corporation, 894 Faulstich Court, San Jose, CA 95112-1361

(P/N 300-01000-017 REV C)

# StarSync 6840

Zero Footprint Integrated  
GPS Stratum 1 NTP Server



Powered by brilliant

**Having your own reliable and accurate local source of NTP has never been easier!**

The CXR Larus StarSync 6840 Integrated Stratum 1 GPS NTP server delivers an entirely new level of reliability and performance for network timing. The StarSync 6840 is a zero footprint, outdoor, pole-mounted Network Time Protocol (NTP) server that embodies its own timing management interface, which provides tools for diagnosis, monitoring and alarms. **For cost sensitive applications**, a lower accuracy version (LIST 1) is available.

With timestamping performed in the hardware, the StarSync 6840 provides wirespeed NTP with unparalleled accuracy. Not only is the product orders of magnitude more accurate than existing software-based solutions, it is also easy to install. Using IEEE-802.3af Power over Ethernet (PoE) and standard Cat 5/6 Ethernet cabling, the StarSync 6840 eliminates costly coaxial cabling and amplifiers.

Once installed, the StarSync 6840 provides Stratum 1 timing when locked to the GPS satellite system. An integrated 12-channel GPS receiver tracks every visible satellite to maintain time accuracy and reliability. In environments where tall buildings or telephone poles may block satellite visibility, the StarSync 6840 automatically uses a single satellite tracking mode to maintain GPS lock and provide Stratum 1 timing accuracy. In the event that the connection with GPS is interrupted, a highly accurate NTP peering algorithm is used for holdover.

The StarSync 6840 communicates with network peer StarSync 6840 servers that are GPS locked to retrieve the necessary information to continue NTP Stratum 1 operation. In the unlikely event that both GPS and network neighbors are unreachable, the StarSync 6840 has a ITU Stratum 3E holdover mode that guarantees accuracy using a very tightly temperature-controlled OCXO oscillator. The StarSync 6840 addresses the demands of today's time-sensitive networks, providing greater accuracy, reliability and throughput for all applications.

The ultra-wide operating temperature range of StarSync 6840 makes this NTP server suitable for even the most severe climates.

[www.cxrlarus.com](http://www.cxrlarus.com)

800.999.9946 | 408.573.2700 | 408.573.2708 (FAX)



## Specifications:

### Interface Configuration:

Port (1) 10/100 Base-T, IEEE 802.3 and 802.3af

### Connectors:

**Copper:** (1) Outdoor Cat5 8-pin mini-con-X (IP67)

### GPS Receiver/Antenna:

**Receiver:** 12 channel parallel tracking at L1 (1575.42 MHz) frequency

**Minimum number of satellites for time:** (1) intermittently

### Timing accuracy:

**Locked to GPS:** 100 ns (LIST 0), or 10  $\mu$ S (LIST 1)

**Locked to Stratum 1 NTP peer\*:** <3 $\mu$ s to UTC (LIST 0)  
within 10 $\mu$ s to UTC (LIST 1)

(\* NOTE: Peer must be CXR Larus StarSync Model 6850 or 6840 Time Servers to guarantee this specification)

### Cable length:

Cat 5e maximum 330 ft. (100 m), PoE (IEEE 802.3, 802.3af) interface

### Server Performance:

**Stratum 1:** 100,000 NTP packets per second while maintaining timestamp accuracy of <250 ns (LIST 0), or 10 $\mu$ S (LIST 1)

**Stratum 2:** NTP peering can be used as the primary mode of operation or as a backup mode in case the GPS reference signal is lost. Best performance is obtained if peers are CXR Larus Model 6840 or 6850 NTP Time Servers

**Holdover accuracy:** 3.7x10<sup>-7</sup> 24 hour stability

### Power Parameters:

**Power** Power over Ethernet IEEE 802.3af

#### PoE Power injector (Optional, AC)

**In:** 100/250 VAC, 50/60Hz  
**Out:** 48 VDC IEEE 802.3af  
**Consumption:** <10W

#### PoE Power injector (Optional, DC)

**In/Out:** 48 VDC IEEE 802.3af  
**Consumption:** <10W

## Physical:

**Dimensions:** 6.69" diameter x 6.207" high (169.93 x 157.68 mm)

**Weight :** 1.5 lbs. (.68 kg)

**Mounting:** 1.5 in. NPT

**ETSI:** EN301 489-19 v1.2.1 (2002-11)

**EMC:** FCC Part 15, Class-A

**Vibration:** <40 Grms from 2 Hz – 2.5 kHz

**Relative humidity:** 0% to 100% (nonimmersion)

**Altitude:** 15,000 ft. (4500 m)

### Temperature

**Operating :** -40<sup>o</sup> to +176<sup>o</sup> F (-40<sup>o</sup> to +80<sup>o</sup> C)

**Storage:** -40<sup>o</sup> to +185<sup>o</sup> F (-40<sup>o</sup> to +85<sup>o</sup> C)

### Management:

Embedded web server GUI  
Telnet/SSH CLI (Cisco-like)  
SNMP

### Client Software:

A NTP client is required for client-side synchronization with any network time server, including the StarSync 6840

### Applicable Protocols/Standards:

Daytime (RFC 867)  
DHCP (RFC 2132)  
FTP (RFC 959)  
HTTP/HTTPS (RFC 2616)  
IEEE 1588 v2 (PTP)  
IPv4  
MD5 authentication (RFC 1321) release 2  
MIB II (RFC 1213)  
NTPv2 (RFC 1119), v3 (RFC 1305), v4 NTP broadcast mode, multicast, many-cast  
SMTP forwarding  
SNMP v1(RFC 1157), v2 (RFC 1448), v3 (RFC 2271) SNTP (RFC 2030) SSH  
SSL v1, v2, v3  
Telnet (RFC 854) , Time (RFC 868) 802.3, 802.3af  
RoHS, WEEE, CE, UL

## Ordering Information:

**Model 6840-0 Integrated Stratum 1 GPS NTP Server, 100ns Accuracy**

**Model 6840-1 Integrated Stratum 1 GPS NTP Server, 10  $\mu$ S Accuracy**

**039-02774-000 Power over Ethernet (PoE) Injector, (AC powered)**

**039-02774-001 Power over Ethernet (PoE) Injector, (DC powered)**

**041-02773-050 Cable, Connectorized, PoE, 50 feet**

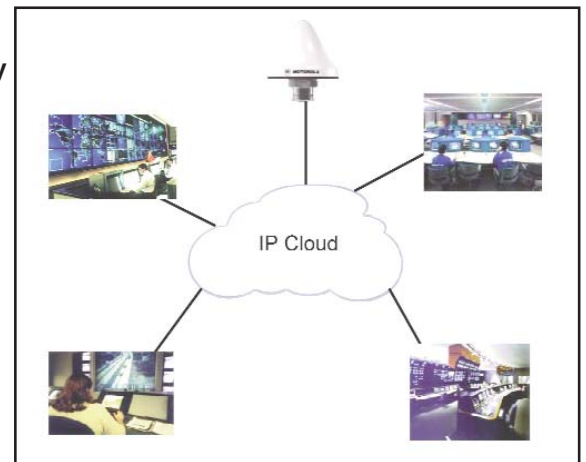
**041-02773-100 Cable, Connectorized, PoE, 100 feet**

**041-02773-150 Cable, Connectorized, PoE, 150 feet**

**041-02773-200 Cable, Connectorized, PoE, 200 feet**

**041-02773-250 Cable, Connectorized, PoE, 250 feet**

**041-02773-300 Cable, Connectorized, PoE, 300 feet**



**Network Timing, Test and Access Solutions**