



SETTING THE NEW
STANDARD FOR THE
NEXTGEN NETWORK



Product Highlights:

- Restore Stratum 1 reference to virtually ANY BITS clock, from ANY manufacturer
- Quick set-up and acquisition
- Completely assembled, ready to use
- Contains all required components, including clock, antenna, mounting hardware, cables, power supplies, all in a hard shell case
- Optional T1 or E1 Intelligent Timing Analysis Test Set available
- Integrated Web Server GUI
- AC or DC Powered, adapters included
- Outdoor Temperature Hardened for the most severe environments
- GPS Stratum 1, NTP Client or PTP-IEEE-1588v2 Slave enabled
- Local indicators for operational verification
- Outputs:
 - (2) T1 or E1 Outputs, framed or unframed, with or without Sync Status Messaging (SSM)
 - (1) PPS, PPM or PP2S, TTL Format
 - (1) 10/5/1 MHz Sine Wave

Uses:

- Emergency restoration of Stratum 1 timing for failing/failed BITS clocks
- Troubleshooting timing related issues in SONET, SDH, and WDM optical networks, TDM and IP networks
- Portable synchronization for real-time, live streaming of IPTV, IP radio and Voice over IP (VoIP)
- Supplant clocking from timing provider
- Back up BITS Clock

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

(P/N 300-01000-018 REV 0)

StarSync 6800 - UTReK

Stratum 1 GPS, NTP/PTP IEEE-1588v2
Universal Timing Restoration Kit



**Quick and Reliable Timing,
Anywhere, Anytime!**

The **StarSync 6800-UTReK** from CXR Larus is a rapid restoration kit for BITS timing networks. Self contained and highly portable, the 6800-UTReK includes all elements required for providing stable reference signals to existing BITS shelves or any network element with external timing connections, such as switch, DACS and fiber optic transport equipment.

The kit includes our popular StarSync 6800 Edge Stratum 1 GPS, NTP client or PTP slave clock, GPS antenna, antenna mount with temporary or permanent mounting hardware, 50ft of connectorized RG58-U, AC Power Adapter, serial PC cable, 6ft Ethernet Cable and full instructions.

The **StarSync 6800-UTReK** may also provide a signal reference to troubleshoot existing BITS systems or supplant clocking from unreliable foreign T1/E1 circuits with untraceable pedigree. If you have no existing clock, the 6800-UTReK is a cost-effective method for testing network components for timing-related intermittent troubles.

Option -TS or -TSE includes a T1 or E1 timing signal analysis test set with local or remote control capability for long-term monitoring. The test set features expert software for qualifying T1 or E1 timing signals and can examine multiple inputs, including comparison to reference signals for clock slips, and also able to read out the Sync Status Messaging labels on T1 or E1 timing signals.

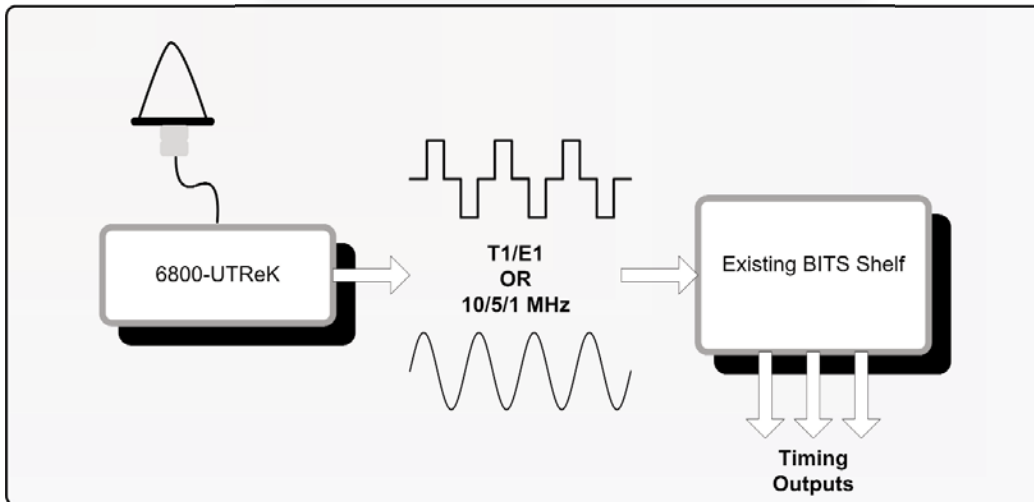
www.cxrlarus.com

800.999.9946 | 408.573.2700 | 408.573.2708 (FAX)



Typical Applications:

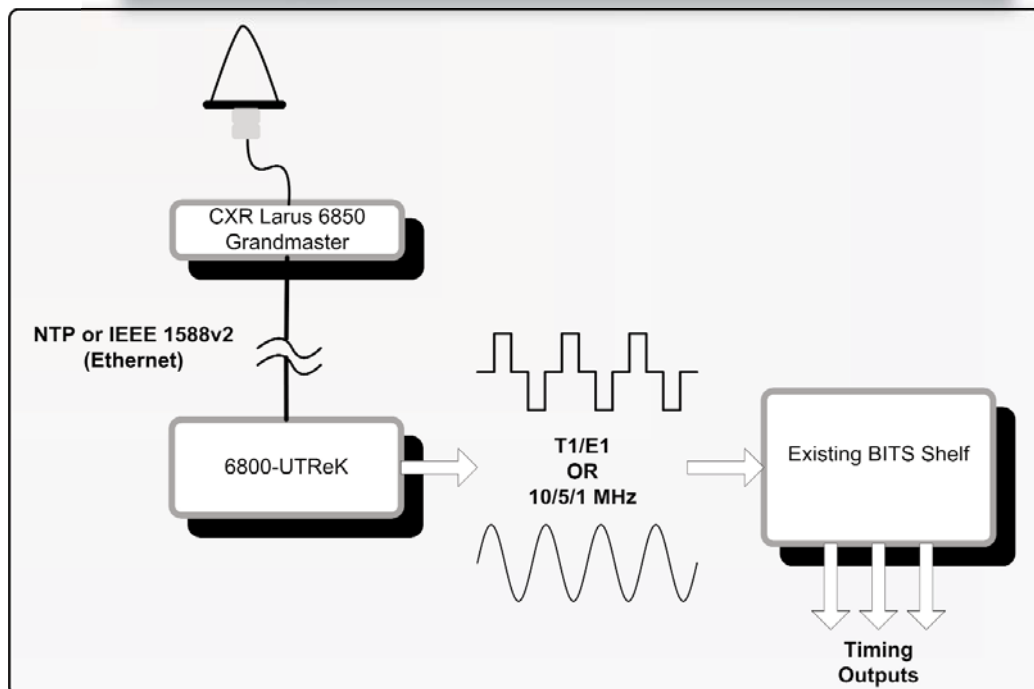
BITS Clock Recovery



Provides GPS Stratum 1 reference signals to existing clocks with failed/failing receivers, oscillators, BITS shelves or Network Element (Switch, SONET/SDH, DACs, etc.)

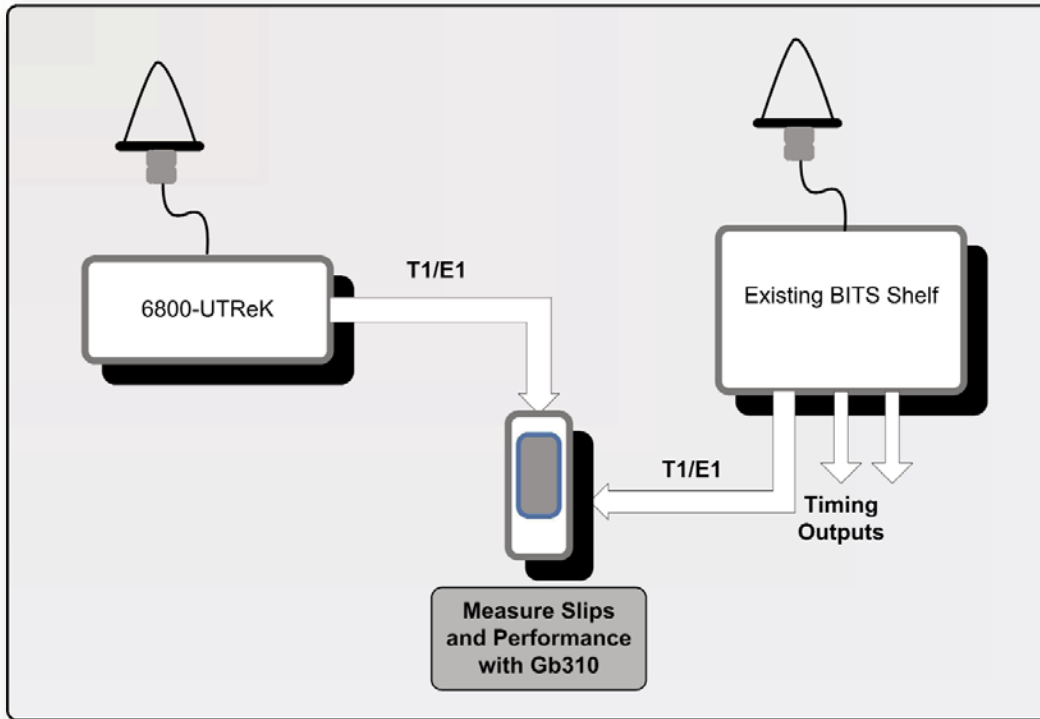
NOTE: When utilizing T1/E1 signals, [Sync Status Messaging](#) is available

Solving Antenna Location Problems



Provides Stratum 1 traceable reference signals to existing BITS shelf or Network Element (Switch, SONET/SDH, DACs, etc.) via NTP (v4) or PTP (IEEE-1588v2) in locations where external antennas are not practical.

Identifying timing problems before they become network problems



With Option -TS or -TSE, your StarSync 6800-UTReK becomes a complete GPS-based self-contained system for evaluation, analysis, and correction of network timing and synchronization problems.

Analyze T1/TE1 Timing

Display SSM Messages

Measure Slips

DS1 [A] [NW] [] ET: 0:00:05
 DS1 TERM DSX ESF Framed
 Loopback B8ZS
 BERT AUTO-TEST Bits
 CLEAR Insert Error
NO ERRORS
 (Slip) 1544007.1Hz -0.5 dBd 5.6Vpp

Labels: Error Analysis, Frequency, Signal Level

DS1 [A] [NW] [] ET: 0:00:51
 DS1 TERM DSX ESF Framed
 Loopback B8ZS
 BERT AUTO-TEST Bits
 CLEAR Insert Error
NO ERRORS
 (msg) 00000100 11111111 0x04
 (hex) Stratum 1 traceable

Labels: SSM Message Readout, SSM Bitstream

DS1 [A] [NW] [] ET: 0:06:57
 DS1 TERM DSX ESF Framed
 Loopback B8ZS
 BERT AUTO-TEST Bits
 CLEAR Insert Error
NO ERRORS
 (Hz) Slips:0.0 Dev:0.0Hz

Labels: Slip Count, Deviation in Hz

Real Results- in Real Time!

CXR Larus StarSync 6800 UTReK Universal Timing Restoration Kit

Specifications:

Nominal Dimensions (Complete kit):

22 in. X 18 in. X 10 in. (56 cm X 46 cm X 25 cm), approx 22 lbs (10 kg)
(Case size may vary)

Contents:

StarSync 6800-xx (See ordering options)
30 dB gain GPS Antenna, with mounting bracket and hardware
50 foot (15,2 m) type RG-58 coax, TNC male connectors
110 AC to -48VDC portable power Supply
6 foot (1,8m) RS-232 cable DB-9 to RJ-45
6 foot (1,8m) ethernet cable, RJ-45 connectors

StarSync 6800 Specifications:

Physical:

Nominal Input Voltage: -48 VDC, (-18 to -72 VDC Limits)
Dimensions (W x D x H): 8.5 in (22 cm) X 12-in (31cm) X 1.75-in (4 cm)
Weight: 2.25 lbs (1 kg)

Environmental:

Operating Temperature: -40F° to 144°F (-40C to 65°C)
Relative Humidity: 0% to 85%, noncondensing

Reference Inputs:

NAVSTAR GPS standard, GLONASS, Galileo, future options
NTP or PTP from precise NTP Server/PTP Grandmaster, such as **CXR Larus StarSync 6850**

Outputs:

(2) **T1/E1** (See ordering information)
RJ-48C connector

T1 port format

Transmit/receive bit rate—1.544 Mbps
Line encoding—AMI, B8ZS
Framing—Superframe (D4/SF), Extended Superframe (ESF) with or without SSM support

E1 port format

Transmit/receive bit rate—2.048 Mbps
Line encoding—HDB3
Framing—G704, G704 without CRC4, unframed with or without SSM support

(1) PPS, PPM or 2PPS Output

Software selectable
5 ns rise, 30 ms duration square wave, 3.3V nominal level
BNC connector

(1) 10/5/1 MHz Output

Software selectable
3.3 V peak-to-peak nominal into 50 ohms, sine wave
BNC Connector

Timing Accuracy:

**Timing- Locked to GPS-
Frequency- 1 X 10⁻¹²
Accuracy- 100 ns to UTC**

Locked to eNTP Peer-

**Frequency- 50 ppb
Timing- < 3 usec to UTC**

HOLDOVER ACCURACY: OCXO- Stratum 3E-

1 X 10⁻⁹ or 86 us to UTC for 24 hours

Optional 6800-UTReK -TS and -TSE Intelligent Timing Analysis Test Set Specifications:

Physical: 4 in. X 9 in. X 2.5 in. (10 cm X 23 cm X 6.5 cm), 2.2 lbs (1 kg)
Powering: Internal extra life Li-ION battery, AC charger/adaptor included

Environmental: Operating Temperature: 32F° to 122°F (0°C to 50°C)
Storage Temperature: -4 F° to 158°F (-20°C to 70°C)

Input: T1 or E1 auto detect ESF, D4 or Unframed, B8ZS or AMI line coding.
E1 version per G.704 standards.
Supports Monitor, Terminated and Bridge modes

Reference Input: T1 or E1, auto detect ESF, D4 or Unframed, B8ZS or AMI line coding. E1 version per G.704 standards
Supports Monitor, Terminated or Bridged modes

Management ports: RS-232, ethernet LAN

Measurements:

T1 or E1 Frequency, Level
Slip counts, Frequency offset to timing reference
Comprehensive BER Testing
Alarm status and History
Sync Status Message display/readout

Ordering Information:

Model	Description
6800-UTReK-41	Universal Timing Restoration Kit, GPS/NTP, T1
6800-UTReK-42	Universal Timing Restoration Kit, GPS/PTP, T1
6800-UTReK-41E	Universal Timing Restoration Kit, GPS/NTP, E1
6800-UTReK-42E	Universal Timing Restoration Kit, GPS/PTP, E1
6800-UTReK-TS	Intelligent Timing Analysis Test Set, T1
6800-UTReK-TSE	Intelligent Timing Analysis Test Set, E1



Optional 6800-UTReK-TS
Intelligent Timing Analysis Test Set



Network Timing, Test and Access Solutions