Symmetricom

TSC UTC

UTC Recovery System

KEY BENEFITS

- <15ns Synchronization to UTC (USNO), Assuming Proper Calibration
- Graphical User Interface (GUI)
- Compatible with all Symmetricom Modules to Generate Output Signals
- 5 MHz, 1PPS and IRIG-B (123 & 000) Outputs for Local Use or Distribution
- No Hard Drive: Utilization of Flash Memory Increases Reliability While Simplifying Code Updates
- Dual Fans, Visual and Network Status Indications, and Dual Power Supplies for Maximum Reliability
- GPS Processing Using Symmetricom's KAS-2© Timescale Software
- Operates with Any 5 MHz Clock Source (Any Cesium or Rubidium)

Symmetricom's UTC recovery system is a GPS disciplined cesium standard. It is integrated from the TSC GPS Rx, 100ps 2-Channel Timer, RF Distribution Amplifier, Synthesizer, Sychronizable Divider, and Time Code Generator. The UTC recovery system generates frequency, 1PPS, and time codes that are all synchronized to UTC. The Kalman filter based software controls the divider and synthesizer without disturbing the cesium standard. A Graphical User Interface allows the user to control the system and monitor its performance.

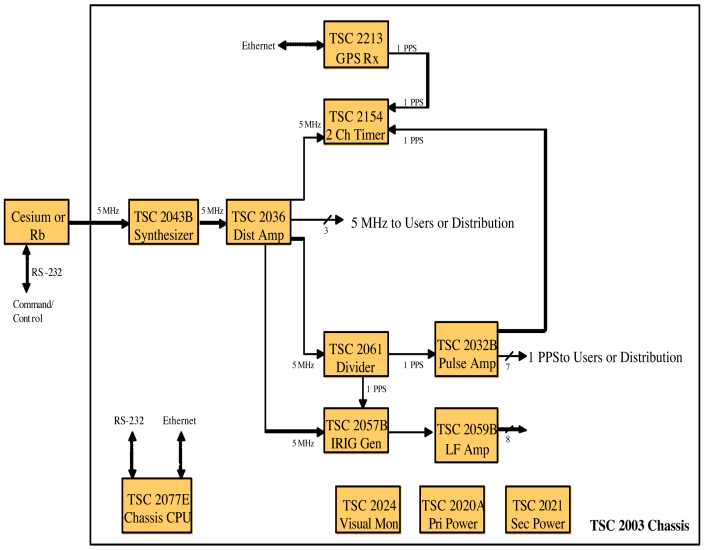
The UTC Recovery System can be configured to custom requirements.

Please contact Symmetricom with any specific requirements.

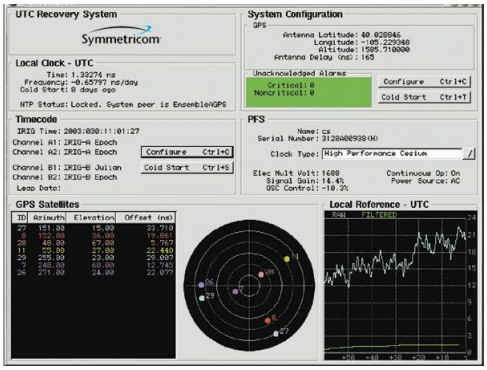
TSC UTC Recovery System

OPERATION

Custom software provides a transportable X-based GUI interface for command and control of the system operation and for display of system performance. The GUI is divided into sections based on function. The GPS panel provides a polar plot of tracked satellites as well as a table of the tracking information for each satellite (including the reported offset to UTC). The system also includes a plot that shows raw GPS data and the filtered data used to steer the DDS. The GUI also contains timecode and alarm information.



TSC UTC Block Diagram



TSC UTC GUI

TSC UTC Recovery System Specifications

PERFORMANCE SPECIFICATIONS

- Offset to UTC(USNO): <15 ns (when properly calibrated)
- 1PPS
  - Rise time: <1ns
  - Jitter: <100ps
- 5 MHz (assuming cesium standard)
  - Harmonics: <40dBc
  - Spurious: <80dBc
  - Phase noise: Same specification as cesium (not degraded)
- IRIG-B (123)
  - Output level: <6 V P-P into 50Ω
  - 3:1 modulation ratio
- IRIG-B (000)
  - Output level: TTL into 50Ω
  - Resolution: 10 ms

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