



Using an SEL-2401, SEL-2404, or SEL-2407[®] to Serve NTP Via the SEL-3530 RTAC

Kim Yauchzee

INTRODUCTION

Network Time Protocol (NTP) is a common protocol used for Ethernet time synchronization in applications requiring 1- to 50-millisecond time accuracy, such as IT (information technology), SCADA (supervisory control and data acquisition), and public safety networks. This application note provides implementation details and requirements for using the SEL-2401, SEL-2404, or SEL-2407 Satellite-Synchronized Clock with the SEL-3530 Real-Time Automation Controller (RTAC) to provide NTP to connected devices.

PROBLEM

In environments where devices do not support IRIG-B or where it is expensive to run IRIG-B cabling, NTP is an economical way to distribute time over Ethernet for applications that are not time-critical. Customers that utilize the SEL-3530 RTAC can benefit from using an SEL clock as an accurate time reference to provide NTP to connected Ethernet devices.

SEL SOLUTION

The following equipment is required:

- SEL-3530 RTAC
- SEL-2407, SEL-2404, or SEL-2401
 - BNC RG-58 cable (C953)
 - Antenna and antenna cabling (C960 or C961)

SEL Clock Configuration

Connect the SEL clock to the IRIG-B input on the SEL-3530 RTAC. Configure the clock to output UTC (Coordinated Universal Time) via IRIG-B. No offset or Daylight-Saving Time (DST) settings should be configured. See the SEL clock instruction manual, available at www.selinc.com, for further details on setup and configuration of control (DIP) switches.

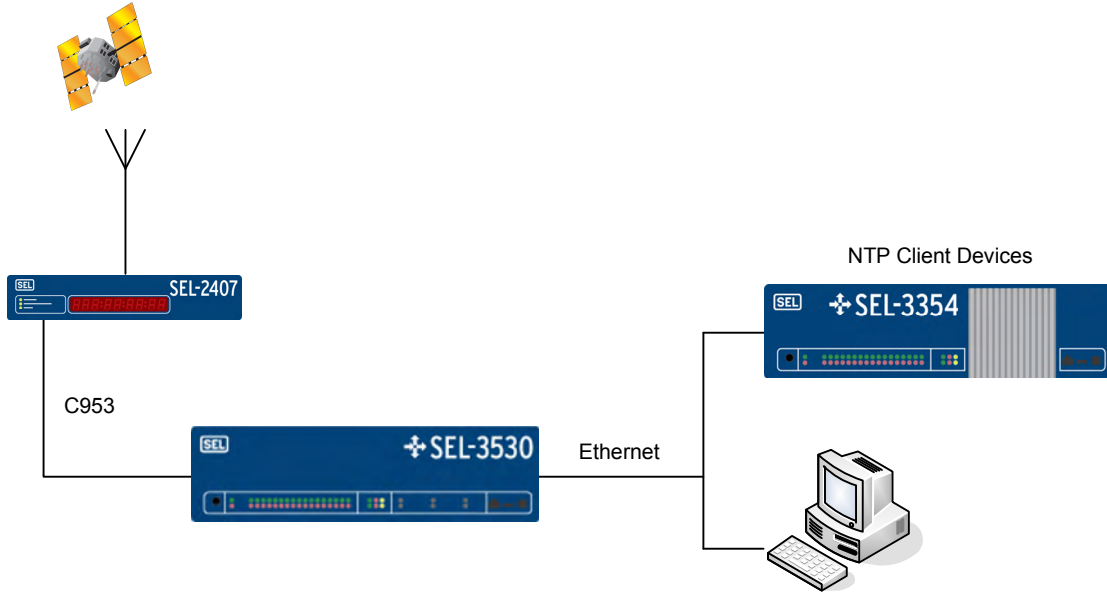


Figure 1 Basic Configuration

SEL-3530 RTAC Configuration

Configure the SEL-3530 RTAC using the SEL-5033 ACCELERATOR[®] RTAC Software. Enable IRIG-B for the time input, enable the Global UTC time option to revert all system time offsets to zero and disable DST settings, and enable NTP time out. See the SEL-3530 Instruction Manual for further details on setup and configuration of NTP time-synchronization settings.

Connected NTP clients will apply applicable DST and offset options as configured on the end device.

CONCLUSION

This SEL solution reduces IRIG-B cabling and provides accurate time for NTP devices connected to an SEL-3530 RTAC.