

Connecting Remote TTClocks with Modems

Introduction

In many applications it is desirable to install TTClock devices in multiple remote locations and download the data from a single host computer. This can be accomplished by installing the TTClock devices with a modem and using the TTClock Utility Program (TTCUP32.EXE) for Windows. This application note will describe by example how to install TTClock devices in remote locations and download the data with the utility program.

System Overview

The host computer is to be located at the home office facility and three (3) TTClock devices are to be installed at local branch facilities. Each TTClock device must be installed with an auto answer modem connected to a phone line at the remote facility. The host computer at the home facility will be used to download the data from the TTClock devices into an ASCII file which can then be processed by other software such as a time and attendance program (TAW32.EXE).

Host Computer Setup

The host computer can be any standard PC (386 or higher) running the Windows operating system and having a spare RS-232 serial COM port. A phone line and an internal (or an external connected to a serial COM port) "Hayes" modem will be required. The PC should have the TTClock utility program (TTCUP32.EXE) installed.

Time Clock Setup

The TTClock devices should be configured BEFORE they can be installed at the remote location. If the TTClock as an "internal" modem the configuration register (SR7 bit 6) should be set. The factory default configuration should be acceptable as long as the device address is set to zero (0). Any required configuration can be accomplished using the utility program and a direct connection to a serial COM port on the PC.

Modem Setup

Installation of the TTClock at the remote location requires a "Hayes" modem and a phone line. If the TTClock is provided with an internal modem the phone line can simply be attached to the RJ-11 "line" jack. An external modem must be connected to the TTClock RS-232 (DB25) connector with a modem (straight through) cable. In either case, the modem must be set for "Auto-Answer" mode. The TTCLOCK can be used to program the attached modem for "Auto-Answer" by holding down the "F1" & "F2" keys during a power on reset cycle.

Utility Program Software

The TTClock utility program (TTCUP32.EXE) must be set up to communicate with the remote TTClock devices. Each TTClock requires a unique entry in the program Address Book.

Select the "Address Book" item from the "Options" menu. Enter the "Connection Data" fields for the first TTClock device. The "Description" field might be "TTClock #1", the "Phone Number" field should match the location of the remote TTClock modem, and the "Device" field should be set to "0" address. Click the "Add" button and the connection is inserted into the Address Book. Repeat the process for the other TTClock devices giving each one a unique "Description" and a corresponding "Phone Number".

The utility program can now communicate with the remote TTClock devices. From the "File" menu make a new connection with the "Select Connection" function. Select one of the TTClock connections from the address book list and click the "Connect" button. The phone number will be dialed and a connection will be

established. From the "Functions" menu click "Retrieve Status" and the associated TTClock should display the device status. From the "File" menu select "Select Connection" and connect to a different TTClock. The current connection will "hang up" and the new connection will be dialed.

Other utility program functions (Counters, Set Time/Date, Alarms, etc.) can also be used in a similar way. However, care must be taken not to re-configure the TTClock so that it does not function properly as a remote device.

Downloading Data

The utility program is used to download the data from the TTClock devices and store it in an ASCII file. From the "File" menu select "Download File Name" to specify the path\name of the ASCII download file. Select "Download" from the "Functions" menu. Set the "Options" menu items to enable "Clear Data" and "Sync Time/Date". Do not select "Entire Address Book". Establish a connection with the "Select Connection" from the "File" menu. Click the "Download" button and the data downloaded from the TTClock.

When the "Entire Address Book" option is enabled, the "Download" button will sequentially connect and download data from every TTClock in the Address Book. The "Clear Data" and "Sync Time/Date" options will be applied to every TTClock in the list.

Multiple TTClocks a Remote Location

It is possible to have more than one (1) TTClock at a remote location using a single modem and phone line. This can be accomplished using a TLD3 line driver device and configuring the TTClock devices to operate in the "Addressable Device" mode.

The TLD3 must be connected to an external modem using a RS-232 "null" modem cable. Each TTClock device must have a unique "Device Address" and will be connected to the TLD3 via a RJ-45 modular (straight through) cable. The TTClock devices and the modem must be configured prior to installation. (For more information on configuring a multiple TTClock installation see application note AN9810 - "Connecting Multiple TTClocks".)