TicTalk™ Overview

Tymkon Process Controls

WARRANTY

Integrated Time Systems, Inc. (**ITS**) is dedicated to designing, engineering, and manufacturing process control equipment of the highest quality and utility. Your satisfaction with our products is of great importance to us.

Our controllers are warranted against defects in materials and workmanship for the lifetime of the product. We will repair or replace, at our option, products that prove to be defective during the warranty period. All repairs will be made at the manufacturer's facility.

As with any process equipment, malfunction and failure can occur due to unforeseen or uncontrollable circumstances. **ITS**, its officers, managers, engineers, representatives, etc. cannot be held responsible for such failure nor for the customer's negligence or misuse of this equipment. At the very least, the customer must follow the procedures and recommendations outlined in this manual in order to obtain proper functioning of the system and maintain a reasonable level of performance.

ITS shall not, under any circumstances whatsoever, be liable to the buyer or any other party for lost profits, diminution of goodwill, or any other special or consequential damages whatsoever with respect to any claim thereunder. In addition, the liability of **ITS** for warranty claims shall not, in any event, exceed the invoice price of the product claimed defective, nor shall **ITS** be liable for delays in replacement or repair of product.

No other warranty is expressed or implied.

For assistance, contact:

Integrated Time Systems, Inc.
PO Box 700699
San Jose, **CA 95170-0699**
Phone: **(408) 996-3822**
Fax: (408) 996-3834

Table of Contents

1. SYSTEM OVERVIEW

1.1. *TicTalk*

TicTalk is a phrase used to encompasses an entire network (used in the general sense) of Host Computers, *Tymkon* Process Sequencers, Gas Panel Interfaces, Drive Controllers and other peripherals. In a typical installation, the interconnection of these devices requires the integration of several different parallel and serial communications protocols from several different vendors. *TicTalk* provides the user a consistent programming interface for these various devices.

1.2. *Tymkon*

Tymkon (pronounced 'time-con') is a series of process sequence controllers designed for batch-type process-control applications. All Tymkon controllers are based on a CMOS microprocessor as the major control element. This, along with other CMOS components and with the application of digital filtering, enables these controllers to operate reliably in the high electrical noise environments in which they often must function. Programming may be accomplished with front-panel controls or from a host computer.

1.3. *TymEdit*

TymEdit is a recipe editor that allows the user to edit and print process segment tables, recipes, temperature tables and configuration information. This information is then stored in a Microsoft Access database on the PC's hard disk where it can be retrieved for later download to one or more *Tymkon's*.

1.4. *TymPlex*

TymPlex is a PC-based software application that provides a graphical user interface and data collection tool for all current versions of Tymkon process sequencer controllers. It allows the user to download recipes from Microsoft Access databases created by *TymEdit* and provides access to all of the *Tymkon* front panel functions as well as data logging functions. The *TymPlex* application may be configured to support from one to eight *Tymkon's* from a single host computer.

1.5. *TymPro*

TymPro is a user profile editor that allows an installation's supervisory staff to edit user lists, process lists, and user-permissions information. These user profiles are then made available to *TymPlex*, *TymEdit* and other *Tymkon*-related applications to regulate user access.

2. SYSTEM REQUIREMENTS

Tic-Talk applications generally run on any personal computer capable of running Windows98, WindowsXP or Windows2000. Operation on Windows95 and WindowsNT may be adequate, but these operating systems are not fully supported. In addition, support for Windows98 systems is expected to dwindle in the future, so new installations should avoid that operating system in preference of WindowsXP or Windows2000.

When a single computer is expected to host more than one process tool, for example four or eight diffusion furnaces, behavior on a minimal computer may be unacceptable. For those installations, the following guidelines are provided. Note that these specifications are appropriate at the time this document was created, but become obsolete very quickly as software evolves and PC's become faster, better, cheaper, etc. In general, when a new installation is defined, simply specify the fastest CPU, the most RAM and the largest hard drive the project can afford. Generally, graphics performance in this type of installation is second priority, but an easy-to-read monitor and a reliable, user-friendly keyboard and mouse will pay off quickly.

Unless the tool host computers are to be networked to a server that can be used to archive data files, it is recommended to use two hard drives connected in RAID-1 (mirroring) mode to avoid data loss in event of hard drive failure.

Motherboard:
    Single Pentium® IV or Celeron processor, 2.0 GHz minimum
    Ram: 256 MB minimum (512 MB preferred on non-Windows98 systems)
    Onboard sound (Yamaha, or equiv)
    ATX form factor (recommended, but optional)
    AGP 2X (recommended, but optional)
    Two USB ports (recommended, but optional)
    Onboard floppy port (recommended, but optional)
    Two 16C550-compatible serial ports
    One printer port (recommended, but optional)
    Three PCI slots or more

Additional 16C550-compatible serial ports, one port per Tymkon (SIIG 'PCI Expander 4S' has been proven acceptable)
32 Meg Graphics memory minimum
Hard Drive; 80 GB min (2-80 GB drives RAID-1 recommended)
Keyboard; Standard 104, PS/2
Mouse; PS/2
Floppy Drive; 3 1/2", 1.44 MB
Network Board; 10/100 MBit, CAT5 (depending on customer site)
CD ROM; 32X minimum
No modem required
No Zip Drive required
Mid-tower cabinet w/ 250 watt power supply
Sound Delivery System (Speakers) (optional)
Monitor: 17" minimum

3. GENERAL INFORMATION

Generally, the setup information and user-preferences settings required by any of the *TicTalk* applications are saved in 'ini' files which are stored in the folders where the applications reside. The 'ini' files are text-based files which have names similar to the names of the applications, except with an 'ini' extension. TymPlex, for example, uses a file named 'TymPlex.ini'. This file is written-to and read-from by the application only. There is usually no need for the user to understand the structure of the 'ini' files or to alter their contents.

Another place where Windows-based applications often store information is in the Windows Registry. The Windows Registry is a hierarchical database maintained by Windows. This database can be edited by the user, but only at high risk of causing system instability. For that reason, *TicTalk* applications avoid using the Windows Registry for application-specific data.

All of the process data stored by the *TicTalk* applications are saved in Microsoft Access97 database files. For example, Process Segment tables, Temperature Segment tables and Process Recipes created by the user using the Tymkon recipe editor, *TymEdit*, are saved in Access97 files. In addition, all process data captured by the *TymPlex* application are saved in Access97 files, as are the user permissions tables managed by *TymPro*.

Generally, each *TicTalk* application creates and manages database files without the need to have Access installed on the host computers. If the user desires to examine raw process data rather than the TymPlex-generated graphs, the user may install Access97, Access2000 or AccessXP on a host computer or on any computer networked to the host computers. Note that Access2000 and AccessXP can be used to examine Access97 files after a trivial conversion process, but the user must be careful not to overwrite the original files with the converted versions. *TicTalk* applications, in their current versions, can not access files that have been converted using Access2000 or AccessXP. Developers of *TicTalk* applications have continued to support Access97 because the files created by Access97 are approximately one-half the size of files created with later versions and many existing installations may not have the required hard disk space.

All of the information contained in a single Access database file is usually related. However, a database file may contain information arranged in more than one way. For example, a database file may contain multiple 2-dimensional tables of data, the forms used to view or edit those tables and query definitions used to order or extract subsets of the data contained in the tables.

4. *TICTALK* DIRECTORY STRUCTURE

Note: In the following discussion, the term 'folder' in used interchangeably with the term 'directory'. Likewise, the term 'sub-folder' is considered synonymous with the term 'sub-directory'.

TicTalk applications are usually distributed on a CDROM which 'autoruns' an installer program when inserted into a CDROM drive. Unless the user chooses a different location, the installer places all applications in a folder called "Tymkon Tools" under the "C:\Program Files" directory. This folder also contains the 'ini' files required by each application and several sub-directories as detailed below. Note that the list below includes information related to all *TicTalk* applications. Not all applications make use of all of the sub-directories described below.

C:\Program Files\Tymkon Tools\AppData
> This folder is used by *TymPlex*, *TymEdit* and *TymPro* to store temporary databases and other files . For example, when the user opens a recipe file for editing in *TymEdit*, a temporary copy of the database is stored here so that the original file may remain intact and unchanged in its original location.

C:\Program Files\Tymkon Tools\Bitmaps
> This folder is not currently used by *TymPlex* and *TymEdit or TymPro*. Any *TicTalk* applications that require animation use this folder for storage of partial images and icons.

C:\Program Files\Tymkon Tools\Characters
> This folder is not currently used by *TymPlex* and *TymEdit or TymPro*. Any *TicTalk* applications that require use of Microsoft Agents for user-interface enhancement use this folder for storage of the Genie and similar Microsoft Agent characters.

C:\Program Files\Tymkon Tools\Datalog
> This folder is used by *TymPlex* and other process-tool hosting applications to store process data tables. Additional information regarding the structure of those database files is provided below.

C:\Program Files\Tymkon Tools\History
> This folder is used by TymPlex and other process-tool hosting applications for storage of each of the recipe files that have been downloaded to a Tymkon. When a download is initiated, a new sub-folder is created within the *History* folder and given a name constructed from the current date and time. A copy of the file to be downloaded is then placed in this new folder. The user may later examine any of these archived files to investigate process anomalies.

C:\Program Files\Tymkon Tools\Logos
> This folder may be used by *TymEdit* to hold logos and other images which may be included at the top of a vertical Tymkon front panel insert. Occasionally, an equipment manufacturer or user may choose to customize a Tymkon insert with either a logo or an image that represents the type of process performed by that particular controller. Additional instructions on how to use this feature is included in the *TymEdit* Instruction Manual.

C:\Program Files\Tymkon Tools\Sounds

    This folder is not currently used by *TymPlex* and *TymEdit or TymPro*. Any *TicTalk* application that supports the use of wave files for user-interface enhancement use this folder for storage of the individual sound clips.

C:\Program Files\Tymkon Tools\UserData

    This folder is provided for use by the user to hold process recipe files. Additional sub-folders may be created here as desired by the user.

APPENDIX B: - TICTALK DIRECTORY STRUCTURE

Note: In the following discussion, the term 'folder' in used interchangeably with the term 'directory'. Likewise, the term 'sub-folder' is considered synonymous with the term 'sub-directory'.

After software installation, the icons that start the applications appear under "Start/All Programs/Tymkon Tools" on the *Start Menu*. Additional copies of those icons can be placed on the *Quick Launch* bar and/or the *Desktop* if desired.

After software installation, the files required for proper operation are stored at the following locations. Note that some of the folders shown below are created by the applications and may not appear until the applications have been run the first time.

> **Drive C:**
>> **Program Files**
>>> **Tymkon Tools**
>>>> **AppData** (Temporary files used by the applications)
>>>> **Datalog**
>>>>> **Tool01** (Process Parameter Logs for Tool 1)
>>>>> **Tool02** (Process Parameter Logs for Tool 2)
>>>>> **Tool03** (Process Parameter Logs for Tool 3)
>>>>> **Tool04** (Process Parameter Logs for Tool 4)
>>>> **History**
>>>>> **Tool01** (Recipe Files downloaded to Tool 1)
>>>>> **Tool02** (Recipe Files downloaded to Tool 2)
>>>>> **Tool03** (Recipe Files downloaded to Tool 3)
>>>>> **Tool04** (Recipe Files downloaded to Tool 4)
>>>> **UserData** (User Recipes)
>>>>> **Tool01** (Recipe Files downloaded to Tool 1)
>>>>> **Tool02** (Recipe Files downloaded to Tool 2)
>>>>> **Tool03** (Recipe Files downloaded to Tool 3)
>>>>> **Tool04** (Recipe Files downloaded to Tool 4)
>>>> TymEdit.exe
>>>> TymPlex.exe
>>>> TymPro.exe (optional)
>>>> TymPlex.ini (Application Settings)
>>>> TymEdit.ini (Application Settings)
>>>> TymPro.ini (optional)
>>>> TymPlex1.ini (Settings for Tool 1, Graph setup etc)
>>>> TymPlex2.ini (Settings for Tool 2, Graph setup etc)
>>>> TymPlex3.ini (Settings for Tool 3, Graph setup etc)
>>>> TymPlex4.ini (Settings for Tool 4, Graph setup etc)

Note that a folder is created at **C:/Program Files/Tymkon Tools/UserData** for storage of user-created recipe files. The user may optionally create additional subfolders at this location or at any other accessible location as required. For example, each process engineer or each manufacturing group may store their unique recipes at locations of their choosing.

As with most Windows applications, dozens of additional DLL and OCX files are placed at various locations on the hard drive during software installation. Generally, the user does not need to be aware of these files or their locations.