The XYZs of GPS, Inc.

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XYZs' FTP

(File Transfer Protocol)

User's Manual

February 14, 2002

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Chapter 1

Introduction to The XYZs' of GPS, Inc. Program XYZs_FTP.EXE

1.0 OVERVIEW

XYZs_FTP.EXE, written by The XYZs' of GPS, Inc., is a generalized FTP program with command-line callable features. The program was designed to operate on Windows 95/98/NT/2000 platforms. To facilitate a wide variety of users, XYZs_FTP can be configured and run through normal Windows Graphical User Interfaces (GUI) or launched directly from the command-line. In fact, a user can use the program just like most other Windows programs or the program can be launched, without need of human interaction, by other programs (such as Ashtech's **Micro-Manager Pro**), from a DOS command-line, or from batch files.

1.1 Minimum System Requirements

XYZs_FTP requires that the target platform be a Windows 95/98/NT/2000 based computer. While XYZs_FTP requires less than 1 megabyte of memory to run, Windows 95/98/NT/2000 impose higher minimums. Please consult the appropriate Microsoft documentation to determine the minimum system requirements for Windows.

XYZs_FTP requires less than 2 megabytes of disk space. The program does create ASCII output log files that contain a diagnostic/tracking history of FTP sessions, however the size of these files is normally very small (e.g., less than 200K per day).

A valid software sentinel key must also be present. XYZs_FTP was designed as a utility support program that supports other programs. As such, it was designed to utilize the sentinel keys of the programs that it supports. Currently, XYZs_FTP will operate using sentinel keys supplied with **Micro-Manager Pro** and 3D-Tracker.

Chapter 2

Installation Instructions

2.0 INSTALLATION OVERVIEW

XYZs_FTP is currently distributed as part of **Micro-Manager Pro**. The program will be installed in the "Utils" sub-directory of **Micro-Manager Pro**. For example, if during the installation of **Micro-Manager Pro**, you chose to have **Micro-Manager Pro** installed into the "D:\Program Files\ASHTECH\MicroMgr" directory, then XYZs_FTP would be installed into the directory "D:\Program Files\ASHTECH\MicroMgr\Utils".

The automatic installation of **Micro-Manager Pro** does not put XYZs_FTP into the Windows search path. One can add XYZs_FTP to the Windows search path by right clicking on "My Computer", selecting the "Properties" menu item, selecting the "Environment" tab, selecting the "Path" system variable and then editing the "Value" field to include the directory in which XYZs_FTP is stored.

Additionally, the automatic installation of **Micro-Manager Pro** neither puts an icon onto the desktop nor into the Start Menu bar. To create a program icon on the desktop, simply browse to the program file XYZs_FTP.EXE using "My Computer", right click and drag the icon to the desktop and select "Create Shortcut Here". For details on how to add a program to the Start Menu, consult Windows Help, searching on "Start Menu", and selecting the topic dealing with adding menu items to the Start Menu.

Finally, XYZs_FTP is protected by a software sentinel key (the same key as is used by **Micro-Manager Pro** or 3D-Tracker). The software sentinel key is installed by attaching the end of the sentinel key labeled ↑COMPUTER↑ to a parallel printer port of your computer. Tighten the screws of the sentinel key to connect the key securely to your computer.   If a printer was connected to your computer, attach that cable to the sentinel. If the sentinel cannot be installed because of an obstruction behind the computer, you can place the sentinel key later in the parallel sequence (for example, you could attach the sentinel key to a DB-25 male to DB-25 female cable that is connected to your computer's parallel port).

Chapter 3

Running XYZs_FTP

3.0 RUNNING XYZs_FTP

XYZs_FTP was designed primarily to support the transfer of data files to and from an FTP server. There are other features available in this program that will be discussed shortly. Some of these features can be accessed through the Graphical User Interface (GUI) of the program or through command-line parameters. The command-line approach allows programs to invoke some of the features of this program without the need of human intervention. Throughout the remainder of this document, we will call the former approach the Manual/GUI approach and the latter will be called the Command-Line approach.

Both the Manual/GUI and the Command-Line approaches rely upon configuration information contained in the INI file associated with this program. This INI file is called "XYZs_FTP.INI" and is stored in the same directory as the main program. Changes to this configuration file occur whenever the user changes configuration using the Manual/GUI approach. In fact, when desiring to use the Command-Line mode, you should pre-set the configuration using the Manual/GUI approach. Section 3.1 will describe the Manual/GUI approach to using XYZs_FTP and Section 3.2 will describe the Command-Line approach to using XYZs_FTP.

It is important to re-state the fact that the configuration information is stored in the file "XYZs_FTP.INI" which resides in the same directory as the program file (i.e., "XYZs_FTP.EXE"). When you require an alternative configuration, for example to support two simultaneously operating **Micro-Manager** programs, you should copy the following files to another directory:
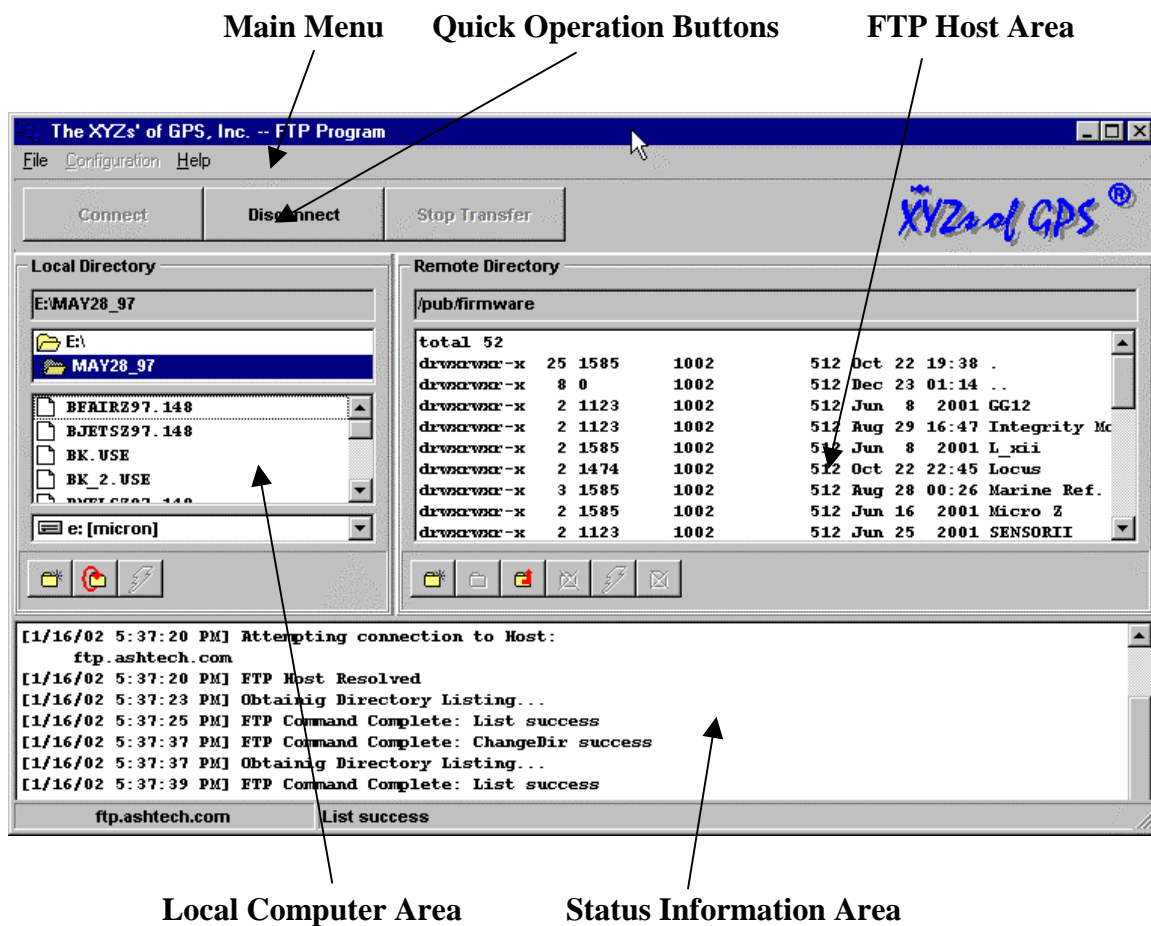
> XYZs_FTP.INI
> XYZs_FTP.EXE
> XYZs_FTP.BMP

By doing this, you create an independent copy of the .INI file. Launching the program XYZs_FTP.EXE from this new directory causes the program to use the INI file from that new directory. This copy would, thus, utilize a configuration that is independent of the other copy (i.e., the original copy) of XYZs_FTP on your computer. In contrast, launching two copies of the XYZs_FTP from the same directory will result in the same INI file being accessed. The configuration stored, at the end of the program runs, is dependent upon which copy of the program terminated first. Needless to say, you are

strongly advised not to launch more than one copy of XYZs_FTP from the same directory (unless you intend to have both copies use the exact same configuration information, which is what is intended with the –Q option described in Section 3.2). Launching several copies of XYZs_FTP, each originating from its own directory, is perfectly acceptable and encouraged.

3.1 Manual/GUI Approach

Upon starting XYZs_FTP without command-line parameters, the following is displayed:

Main Menu   **Quick Operation Buttons**   **FTP Host Area**

Local Computer Area   **Status Information Area**

Presented above is the main program window divided into sections - the names of which will be used for reference. These sections are briefly described in the table that follows:

Section	Brief Description
Main Menu	The main menu of the program. Through these, one accesses various information and settings of the program.

Quick Operation Buttons	These buttons are placed here to allow quick access to several features of the program. "Connect" is used to start the process of connecting to an FTP server. "Disconnect" will become available once a connection with an FTP host has been established. The button is used to break the connection with the connected host. "Stop Transfer" becomes available when an FTP (i.e., file transfer) operation is in progress.
Local Computer Area	Within this section are information related to your local computer and GUI elements that allow one to interact with the local computer system. For example, the last drop-down list box in this area is used to select another drive on the local computer. Also within this area are context sensitive buttons that become enabled or disabled depending upon the current state of the program. For example, when the lightning button (i.e., the button with the lightning bolt icon) is enabled, one can press that button to cause the highlighted file to be transferred to the FTP host. When the button is disabled, the FTP transfer of files from the local computer to the FTP host is not permitted (e.g., you have not yet established a connection to the FTP host). These buttons are described in more detail in Section 3.1.2.1.
FTP Host Area	Within this section are information related to FTP host system and GUI elements that allow one to interact with the FTP host computer system. The top pane of this area shows the current directory on the FTP Host system. The pane below that shows a directory listing of the current directory of the FTP Host system. At the bottom area of this window are a set of context sensitive buttons that become enabled or disabled depending upon the current state of the program. For example, the button with the red up-arrow folder is used to move up one directory level on the FTP Host system. When this button shows its icon in color, the button is enabled. When the button is disabled, it is displayed in faint gray. These buttons are described in more detail in Section 3.1.2.2.
Status Information Area	The status information area is used to display diagnostic/status information about the connection and/or the operation in progress.

In the upper-right-hand corner of the window is an "XYZs of GPS" logo. The color of this logo is used to provide normal/alert level status information. What follows provides a description of each state.

This state indicates that XYZs_FTP is operating normally and without any reported alert or warning conditions. The satellite icon above the lettering will be moving continuously.


The letters of the icon toggle between yellow and blue. This state indicates a warning condition and is accompanied by a window, which explains the warning.

The letters of the icon toggle between red and blue. This state indicates an <u>alert</u> condition and is accompanied by a window, which explains the alert.

There are two levels of error conditions reported through this program: 1) Warnings; and 2) Alerts. Warnings (i.e., the yellow flashing icons) are used to designate conditions that require your attention but are not potentially fatal to proper execution of the program. Alerts (i.e., the red flashing icons), on the other hand, are used to designate conditions that may arise that have a potentially adverse effect on the continued operation of the program and you are advised to immediately terminate the program upon receiving such an alert. During command-line mode (see Section 3.2), XYZs_FTP will terminate the program when these Alert (i.e., but not Warning) conditions arise.

As mentioned earlier, when an alert or warning condition arises, XYZs_FTP will display a window explaining what would likely cause such a condition. The following is an example of a window displayed during an alert condition.
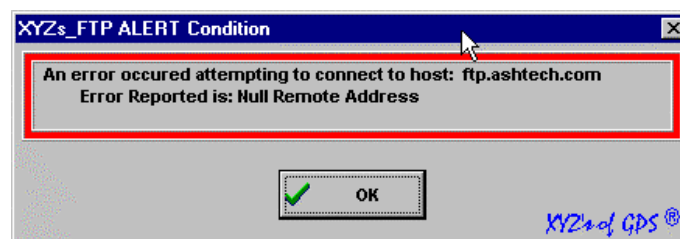
Each of these windows, announcing alert and warning conditions, are controlled by a timer. If you fail to respond using the "OK" button within that window and the timer expires, then the window will be removed. We have taken this approach because error conditions may arise during the command-line (i.e., unattended) mode of the program. When this occurs, these windows will still be displayed and removed when the timer runs out. The error condition will be written to the Log File (see Section 3.1.1.2.3) and the Status Information Area described above.

XYZs_FTP can be configured to play a sound file when alert or warning conditions occur. Separate sound files can be played to distinguish between warning and alert conditions. Refer to Section 3.1.1.2.2 for more details on configuring XYZs_FTP to play sound files.
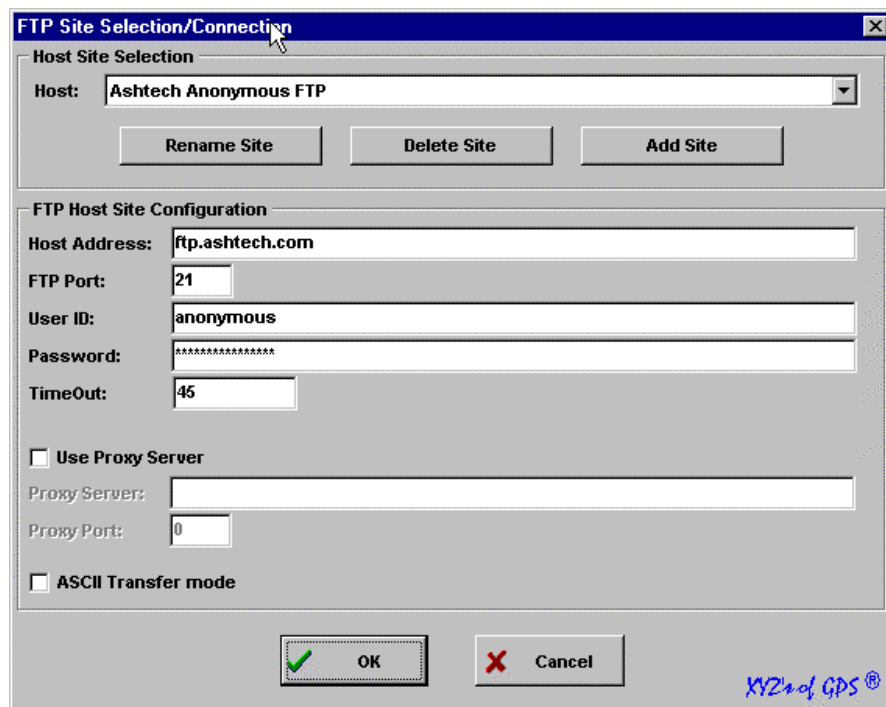
3.1.1 Configuring the Program

Before running the program, you are advised to set the configuration to meet your needs. The configuration options are accessed using the "Configuration" menu item of the main menu. Upon selecting the "Configuration" main menu item, a drop-down menu similar to the following will be displayed.
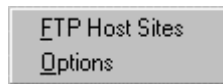
The "FTP Host Sites" menu option is used to configure (and/or connect to) Host FTP sites. The "Options" menu item is used to set various program options specific to your local system environment (and, as such, this will be described first).

3.1.1.1 Configuration/FTP Host Sites

Upon selecting the "FTP Host Sites" sub-menu item of the main menu "Configuration" item, a window similar to the following will be displayed.

That Host's system administrator controls access to an FTP Server. Consequently, in order to gain access to an FTP server, an account, password, and access permissions must be granted/created by the administrator of that system. This is important, especially with regard to access permissions.

XYZs_FTP is capable of uploading files to and downloading files from an FTP Server as well as creating and deleting host server directories. However, the account that is setup by the system administrator must grant all of these capabilities or can restrict or deny any of them. Therefore, your ability to use features of the FTP program are highly dependent upon the account and whatever access privileges are granted when the system administrator creates/updates your account.

XYZs_FTP can store configuration information for several different FTP hosts. It can even store multiple configurations (say for different accounts) for the same host. The uniqueness is identified by a descriptive host name that you provide. Under the area of this window labeled as "Host Site Selection" there is a drop-down list of all the independent configurations. To add a new host, simply press the "Add Host" button. Upon doing so, you will be provided with a window through which you can provide a descriptive name of the host. You then create this descriptive host. To rename a host (i.e., to alter the descriptive name), select the host via the drop-down list box and then press "Rename Site". Upon doing so, you will be provided a prompt window through which you can change the name of the host. To delete a host configuration, simply select the host to be deleted (via the drop-down list box) and press "Delete Site".

The configuration of the currently selected host site is contained in the area of the window that is labeled "FTP Host Site Configuration". The table that follows describes each of the elements this window area.

Field	Description
Host Address	Enter the URL or IP address of the FTP host.
FTP Port	TCP/IP connections consist of an address and a port number. One can treat each port number as a different virtual connection to the host site. By an industry-recognized convention, supplied port numbers are used for different networking services (e.g., TELNET, SMTP, and FTP). Port 21 is used by nearly all systems for FTP services. We provide an entry for the port number to allow FTP connections with servers that do not support the recognized convention. Again, normally Port 21 is used for FTP transfers.

| Field	Description
User ID	This is the User ID (or login name) that is created by the System Administrator of the host site. That is, even though a host site exists and is accessible through the network (or internet), you cannot gain access to the FTP services until that host system allows you to log in. Even though an account has been set up for you (giving you a user name and password), you may not be able to access all of the FTP features (such as creating directories, deleting directories, uploading files, and/or downloading files) unless your account has been created with the appropriate access privileges. You must check with the host system administrator for account information and he/she must grant the access privileges.
Password	See "User ID" described above. To protect your password, the prompt field will always contain asterisk characters for each letter of the password. Additionally, the configuration information for each site is stored in a file. The passwords, however, are encrypted in that file. Backspace and correction are permitted.
TimeOut	This field specifies the maximum number of seconds to wait between the issuance of a command and the receipt of a reply before declaring a no response condition to the command. If the network over which you will be communicating routes a high volume of traffic, you may need to increase this number.
Use Proxy Server, Proxy Server, and Proxy Port	The use of a Proxy Server is highly dependent upon your connection to the FTP Host. Most FTP users will NOT need to enable the use of a proxy Server. To determine your need of proxy servers, please consult a network administrator for details. Enabling the "Use Proxy Server" checkbox enables the "Proxy Server" and "Proxy Port" fields. The "Proxy Server" field should contain the name or IP address of a proxy server if access is being carried out via a proxy port. The "Proxy Port" field should contain the port of the proxy server, if one is being used.
ASCII Transfer Mode	Various systems, such as UNIX and Windows, store ASCII files in slightly different formats (i.e., the End of Line and End of File markers can differ). When ASCII files are transferred between these systems, special handling of these special characters must occur to translate them to the appropriate form on the receiving end. Unfortunately, many systems do not tag files as either ASCII or binary and the special characters that are in a typical ASCII file are also in binary files. Therefore, in order to translate ASCII files properly during upload/download, you must set the ASCII Transfer Mode On (i.e., the checkbox should be checked). However, because this program was designed as a companion program for GPS binary data files, it is recommended that you leave this checkbox unchecked until it is needed.

3.1.1.2 Configuration Options

There are several miscellaneous configuration options of XYZs_FTP that are reached by selecting the main menu "Configuration" item and then selecting the "Options" sub-menu item. The displayed window is divided into three categories, each of which are described in the following sub-sections.

3.1.1.2.1 Configuring Auto-Options

The "Auto-Options" tab of the FTP Configuration Window is used to set some parameters that will be used by the program when it is run in command-line mode (see Section 3.2). That is, this program can be run from command-line mode and has been designed to operate with other programs in an unattended mode. For example, when this program is operated in the GUI mode and connection attempt to a server fails, the operator gets an immediate notification and he/she can decide to try again or wait until later. When this program is operated in a command-line mode and a connection to a particular host site fails, some action must be taken to try to re-connect to that server later. The "Auto-Options" tab of this window allows one to configure the parameters that govern the re-connect process.

The following is an example of the "Auto-Options" tab.
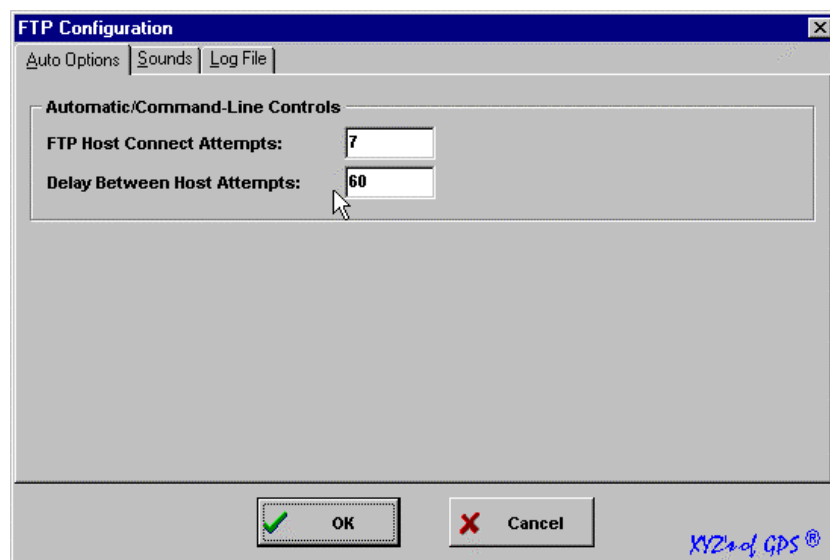
The "FTP Host Connect Attempts" establishes the number of times that this program (when run from its command-line, see Section 3.1.1.1) will attempt to re-connect with an FTP host site. The "Delay Between Host Attempts" parameter is used to specify

the number of seconds between re-connect attempts. If XYZs_FTP never connects to the host, a notice will be written in the Log file created by the program (see 3.1.1.2.3).

3.1.1.2.2 Configuring Sounds

XYZs_FTP is capable of playing WAV files when an alert or warning condition arises (see Section 3.1 for an explanation of these conditions). The "Sounds" tab of the "FTP Configuration" window allows one to set the sound files that will be played when the alert or alarm condition arises. IT IS IMPORTANT TO NOTE THAT XYZs_FTP DOES NOT CHECK TO ENSURE THAT A) YOU HAVE A SOUND CARD AND B) THAT YOUR SOUND CARD IS CAPABLE OF PLAYING WAV FILES. If your computer does not have a sound card, it is suggested that you not attempt to play any sounds: i.e., that you leave the "Play sound file on Warning" and "Play sound file on Alert" checkboxes unchecked.
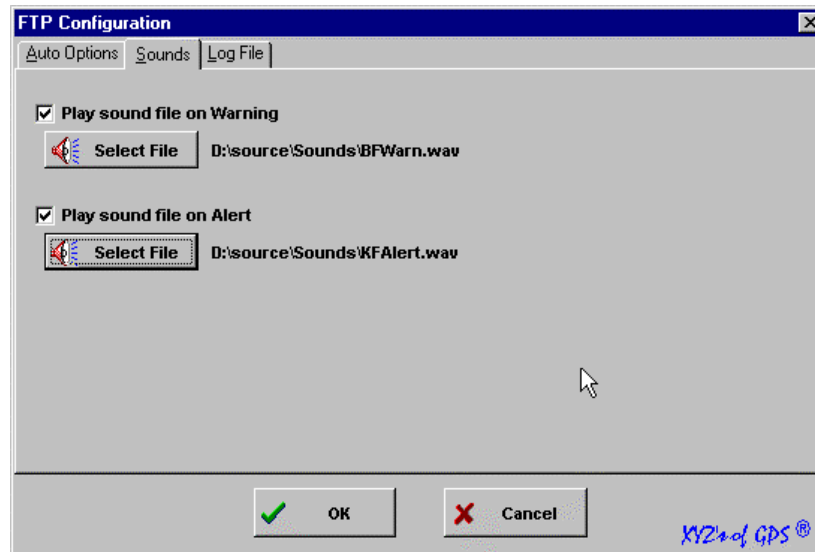

To play a sound file on the Warning condition, ensure that the "Play sound file on Warning" checkbox is checked and you use the associated "Select File" to select the desired WAV file. Upon making your file selection, XYZs_FTP will test play that selected sound file. Likewise, to play a sound file on the Alert condition, ensure that the "Play sound file on Alert" checkbox is checked and you use the associated "Select File" to select the desired WAV file. Upon making your file selection, XYZs_FTP will test play that selected sound file.

When either a warning condition or an alert condition exists, XYZs_FTP will provide a window describing the alert or alarm condition (which will stay visible for about 5 to 10 seconds) and then attempt to play the selected sound files every 1.5 seconds (i.e., repeating the sound file every 1.5 seconds while the window is visible). Because the XYZs_FTP starts to play these sound files at 1.5-second intervals, you are advised to

keep your warning and alert sound files shorter than 1.5 seconds to avoid (annoying) overlaps.

3.1.1.2.3 Configuring Log File

The "Log File" tab of the FTP Configuration window is used to configure an output log file. Every message written to the "Status Information Area" (see Section 3.1) will also be written to the configured log file (i.e., if the option has been enabled). Each separate log file entry will contain a time tag (enclosed in square brackets: i.e., "[" and "]"). This time tag is the CPU time associated with when the message was written. The following is a screen capture showing the log file configuration tab.
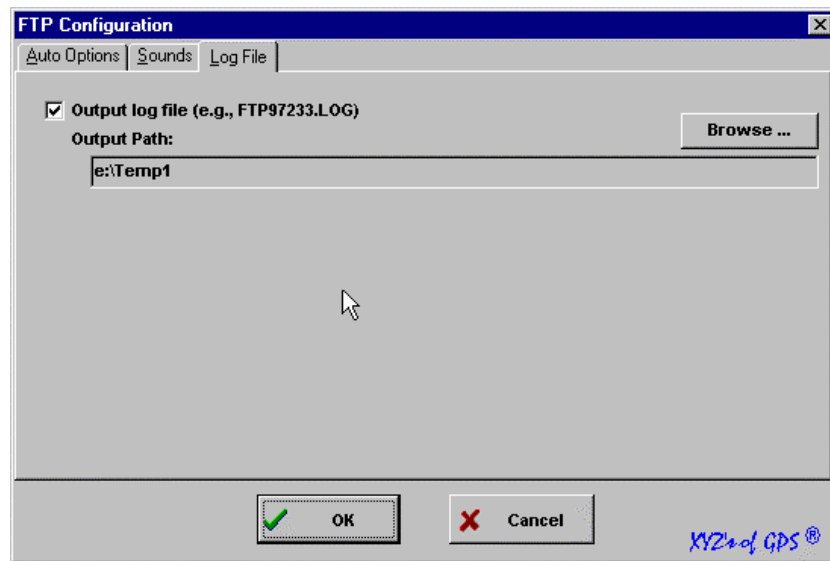
The checkbox labeled "Output log file" is used to enable/disable the log file output. When checked, the output log file option is enabled. Simply use the "Browse" button to select the directory within which the log files will be created.

Log files created when XYZs_FTP is run have the following naming convention:

FTP*yyddd*.LOG

where,   *yy*   Year of log file creation (2-digits)
              ddd   The day of the year of log file creation (3-digits)

The year and day of year values are obtained from the CPU clock. If the program is started and the log file name generated by the program matches one already on the system (in the specified output log directory), then XYZs_FTP will append to that file. Log files are opened when the program starts and close when the program ends. That is, if the

program runs continuously for several days, only one log file will be active (and it will have a file name that corresponds to the time at which the program was started).

3.1.2 Performing FTP Functions

To begin FTP functions, one must be connected to an FTP host site. However, to connect to a site and to perform FTP functions two elements must already be in place:

1) Your computer must be capable of connecting to a network that communicates with the Host FTP site; and
2) An access account must be configured on the Host site that grants you FTP access.

The process of getting your computer connected to a network that communicates with the FTP host site is beyond the scope of this manual. For details in this area, it is suggested that you contact your MIS Department and/or your system administrator, or consult your computer manuals (e.g., Windows Remote Access Server).

XYZs_FTP is capable of uploading to and downloading files from an FTP Server as well as creating and deleting host server directories (these are example FTP functions). However, the account that is setup by the system administrator must grant all of these capabilities or can restrict any of them. Therefore, your ability to use features of the FTP program are highly dependent upon the account and access privileges granted when the system administrator creates/updates your account.

Once items 1 and 2 are in place, you can connect to an FTP site by pressing the button labeled "Connect" in the upper-left area of the main program window. Upon doing so, you will be presented with a window similar to that described in Section 3.1.1.1 (please consult that section for other details on the editable window elements). The main difference between the window shown in Section 3.1.1.1 and that which will be displayed when the "Connect" button is pressed is that the "OK" button will be labeled "Connect".

Before pressing the "Connect" button on the displayed window, simply use the drop-down list box (labeled "Host") to select the desired host site. Upon pressing the "Connect" button, XYZs_FTP will attempt to connect with the specified FTP host system. During the connection process, many of the display elements of the main window will be disabled. After the connection is established, XYZs_FTP will attempt to load and display directory information of the host FTP site (in the main window "FTP Host Area" described in Section 3.1).

The sub-sections that follow describe the window elements/features of the main window once a connection has been established.

3.1.2.1 Local Computer Area Window Elements

Section 3.1 shows a breakdown of the major window elements of the main window. The elements labeled "Local Computer Area" (in Section 3.1) will now be described.

Within the "Local Computer Area" is information related to your local computer and GUI elements that allow one to interact with the local computer system. The topmost element of this area contains the current working directory of the local drive. The next control element, below that, allows one to select the current path of the local hard drive. The next pane to follow contains the set of files stored in the selected path. This pane allows one to select a single file (upon doing so, the file transfer button of the Local Computer Area will be enabled – which will be described shortly). The next pane contains the device selection drop-down list box. Through this drop-down list box, one selects alternative devices/drives on the local PC.

The final pane of the window contains a set of context sensitive buttons that are related to the local computer system. These buttons are as follows:

This button allows one to create a new folder (or subdirectory) on the local computer system

This button is a refresh button for the local computer directory information. This button exists only because some operating systems do not auto-refresh the directory listing components of this window when a change to the files structure occurs (e.g., another program places a file into the directory which is currently being displayed in the Local Computer Area). Pressing this refresh button ensures that the directory information displayed is the latest.

This button is used to upload the currently selected local computer system file to the FTP host system.

3.1.2.2 FTP Host Area Window Elements

Section 3.1 shows a breakdown of the major window elements of the main window. The elements labeled "FTP Host Area" (in Section 3.1) will now be described.

Within the "FTP Host Area" is information related to the FTP host system and GUI elements that allow one to interact with the FTP host computer system. The top pane of this area shows the current directory on the FTP Host system. The pane below that shows a directory listing of the current directory of the FTP Host system. Each entry within this pane that starts with a "d" is a sub-directory. To change to that sub-directory,

two alternative methods can be used: 1) double-click the line containing the "d" or 2) Press the change directory button described below.

At the bottom area of this window are a set of context sensitive buttons that become enabled or disabled depending upon the current state of the program. An enabled button shows color and, when the mouse pointer is rested over an enabled button for a moment, a hint describing that button will be displayed. A disabled button is displayed in a grayed-out color and the button does not respond to button presses. The buttons are described below.

This button allows one to create a new folder (or subdirectory) on the FTP host system (assuming the account privileges grant this capability).

This button allows one to move one directory deeper into the directory tree on the FTP host system (assuming the account privileges grant this capability). One must first select a "d" entry in the FTP host directory-listing pane of the window.

This button allows one to move one directory up in the directory tree on the FTP host system (assuming the account privileges grant this capability and one is not at the top level directory).

This button, when pushed, will request the removal of the selected sub-directory on the FTP host system (assuming the account privileges grant this capability). One must first select a "d" entry in the FTP host directory-listing pane of the window.

This button is used to download the currently selected FTP host system file (in the FTP host directory-listing pane of the window). Like the other buttons of this area, this assumes that the account privileges grant this capability.

This button is used to request that the FTP host system delete the currently selected FTP host system file (in the FTP host directory-listing pane of the window). Like the other buttons of this area, this assumes that the account privileges grant this capability.

3.2 Command-Line Approach

The Command-Line approach to running XYZs_FTP is invoked by calling the program with the command-line parameters listed in this section. The Command-Line approach permits automatic FTP operations on a named Host FTP site without human intervention. In this way, programs or batch files can automatically perform FTP functions (such as uploading result files to an FTP server).

In Section 3.1.1.2.1, FTP "Auto-Options" are described. The parameters, detailed in that section, govern some of the behavior of XYZs_FTP when invoked using the command-line approach. But before continuing, we need to describe two primary modes of the command-line approach.

Often, multiple programs and batch files in an unattended system will need to FTP files to an FTP host system. This presents a dilemma for XYZs_FTP. For example, suppose two copies of XYZs_FTP are launched by different programs (via the command-line) and they both attempt to connect to the same host FTP site. Often these sites allow only one connection on a given account. Therefore, a race condition ensues and only one will be successful. To overcome this, we have implemented two features in XYZs_FTP: 1) the re-connection parameters described in Section 3.1.1.2.1; and 2) the –Q command-line parameter.

The –Q command-line parameter enables what is termed a master/slave mode within XYZs_FTP. Accordingly, the first occurrence of XYZs_FTP to be run using the –Q command-line parameter will become the master. Any others that use the –Q command-line parameter will become a slave to the master. In this relationship, the slave will submit its FTP requests (inclusive of account information) to the master for processing. The master accepts these requests and places them into a queue of FTP operations to be performed. The slave then terminates leaving the master to process and handle each queued FTP operation one-by-one. When the master has completed processing the queued requests, it then enters a dormant state (i.e., it does not terminate) and awaits further requests by any slaves. The master stays resident as long the operator does not terminate it or the system is not shut down.

Thus, if it is desired that multiple programs launch and exercise XYZs_FTP functions, it is recommended that each and every occurrence use the command-line call containing the –Q parameter. When the –Q parameter is not used, the master/slave relationship is not used, and the above mentioned race condition can occur.

The general form of the command-line call to XYZs_FTP is as follows:

XYZs_FTP.EXE [*options* [*secondary_args*]]

Many *options* require secondary arguments. Each option will now be described. The symbol for the option is not case sensitive.

-H *hostname*
This command-line option is used to specify, to the Host FTP site, that you desire to connect with the given command-line operation. Here you specify the unique-descriptive host name configured as described in Section 3.1.1.1. Please note that if the configured host site name contains spaces, you should bound the name by double quote characters (e.g., "XYZs FTP Site"). Please note that it is intended

that this command-line parameter be used in conjunction with either the –U or –C command-line parameters.

-C *newhostpath*

This command-line option is used for the automatic creation of a directory on the FTP host system (assuming that the access account grants such privileges) specified using the –H command-line parameter. Please note that as long as the top-level path in the specified *newhostpath* exists, XYZs_FTP will attempt to create any missing sub-directories in the path specified.

-M

This command-line option is intended to be used with other command-line options. The option instructs the XYZs_FTP program that it is to start-up as a minimized program.

-Q

This command-line is used for automatic FTP processing where one or more copies of XYZs_FTP can be running simultaneously (as described earlier in this section). For example, multiple copies of The Thales Navigation GBSS program can launch post-session commands simultaneously, each of which can contain calls that launch separate copies of this program simultaneously. To prevent the race condition, the –Q enables the master/slave relationship described above. Please note that it is intended that this command-line parameter be used in conjunction with –C or –U command-line parameters.

-T *targetpath*

This command-line option is used for automatic FTP uploads where it is desired to specify the target path on the host FTP system. The parameter *targetpath* specifies the desired FTP system target path. Please note that it is intended that this parameter be used in conjunction with the –H and –U parameters.

-U *fullpathname*

This command-line parameter specifies the full path and name of the local computer file to be uploaded to the remote FTP host site. Please note that it is intended that this parameter be used in conjunction with the –H command-line parameter.

Example 1:

XYZs_FTP.exe -H "XYZs FTP Site" -U D:\Test\TestFile.BIN

In this example, the program is instructed to establish a connection with the configured FTP host named "XYZs FTP Site" and upload the file "D:\Test\TestFile.BIN" into the FTP target directory set during the last GUI run of the program for that host site.

Example 2:

XYZs_FTP.exe -H "XYZs FTP Site" -U D:\Test\TestFile.BIN -T /web/plots

In this example, the program is instructed to establish a connection with the configured FTP host named "XYZs FTP Site" and upload the file "D:\Test\TestFile.BIN" into the FTP target directory "/web/plots".

Example 3:

XYZs_FTP.ex -H "XYZs FTP Site" -c /web/plots

In this example, the program is instructed to establish a connection with the configured FTP host named "XYZs FTP Site" and make the directory "/web/plots".

To reiterate, if any of your command-line FTP operations could cause multiple copies of XYZs_FTP to be running simultaneously, it is highly recommended that the –Q option be added to each of the command-line calls.