ProFiler Automated Program Archiver

Server Guide

Contacting Telos

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Fax: +49 81 61 42 402.

By E-Mail:

The address is: support@telos-systems.com.

Via World Wide Web:

The Telos Web site has a variety of information that may be useful for product selection and support. The URL is: http://www.telos-systems.com.

Notice:

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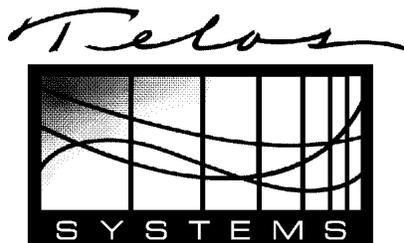
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Service

You must contact Telos Systems before returning any equipment for factory service. If your ProFiler card requires service please contact Telos Systems for a Return Authorization number, which must be written on the exterior of your shipping container. Please do not include cables unless specifically requested by the Customer Support Engineer. Be sure to adequately insure your shipment. USA customers please contact Telos Systems directly. All other customers should contact your local representative to arrange for service.

Feedback

We welcome feedback on any aspect of the Telos ProFiler or this manual. In the past, many good ideas from users have made their way into software revisions or new products. Please contact us with your comments.

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Telos ProFiler Server Guide

Table of Contents

1 Introduction

Thank you for purchasing the Telos ProFiler Automated Program Archiver - the broadcast logging/skimming system that frees you from obsolete logging equipment once and for all. Now you can easily log your station's audio using a PC. Say goodbye forever to fast-forwarding through endless piles of tapes: ProFiler lets you pinpoint and retrieve audio with a surgeon's precision. And ProFiler's time-stamped MP3 files can be auditioned from anywhere on your network or Web server. You can even send audio files to an FTP server, or via email.

Telos ProFiler is a software application bundled with a Telos professional-quality balanced PCI audio card. With ProFiler, radio stations can now make MP3 audio logs of their programs. MP3 audio compression technology helps reduce storage space requirements, eases searches for specific material, and can archive morning shows for on-air replay.

The archived audio is saved as an MP3 file with additional time-of-day information. These files can then be played on any MP3 compatible system, can be sent over the Internet, be posted on Web sites for streaming audio, and be stored efficiently on high-capacity digital media. There's an automatic skimmer that switches from low-bit-rate logging to high-bit-rate skimming on the fly – perfect for telescoped airchecks or high-quality station composites. ProFiler's recording software (the "Server") runs under Windows 2000, and the playback software (the "client") runs under Windows 95 or greater.

The main record/play unit requires a single PC. Each Telos audio card provides connections for audio input/output, as well as four contact closure detection inputs for external control. The system provides for recording two audio channels per Telos audio card. This can be two mono channels or a stereo pair. Expandability is simple, and involves installing additional Telos cards as required.

Playback of audio files can be accomplished from the recording PC, or from a computer connected by network to the server. It is also possible to listen to audio as it is being recorded in real time, providing your network can support the required bandwidth.

From everyone at Telos Systems, thank you again for choosing ProFiler!

ProFiler Features

Some of the more significant features of ProFiler include:

- Playback from a local PC or via remote connected to a server network. Audio files stored on a local PC can be auditioned remotely via LAN, WAN, or the Internet.

- User-selectable bitrate allows adjustment of quality/drive space ratio.

- Audio is stored in easy-to-search, 15-minute blocks broken at quarter hour intervals.

- Recording mode can be set for logging (continuous archival storage of program material), skimming (records only when talent microphone is open), or soft-skimming (low-bitrate logging switches to high-bitrate logging when microphone is open).

- ProFiler can simultaneously record/encode audio and allow live or stored content playback.

- Locally stored audio can be archived to removable media.

- Professional PCI audio card has balanced audio input/output and contains contact closure inputs to activate skimming function.

Version 2 of ProFiler introduces the following changes:

- Multiple Telos cards per PC. The ProFiler server can now record either one stereo or two mono streams for each Telos card installed in the system. ProFiler v2 only works with Telos audio cards.

- Dual-mono support. Each stereo audio input device can be split into two separate mono channels.

- Multiple Streams/Formats/Archives per audio source. Each audio source can be recorded at different bitrates with different storage policies. For example, you could record the talent at a high bitrate and keep this material for a maximum of 7 days at the same time that you record everything at a low bitrate and keep it for a much longer period of time.

- Restrict the Stored Audio by Date. The stored audio can now also be restricted by date regardless of disk space used (provided there is enough space on the disk). This allows you to keep material for a fixed number of days to match your desired storage policy.

- Integrated Recorder and Server. All streams are now configured and recorded through a single instance of the recorder/server application. All streams can now be accessed via a single server connection. The client software displays a list of available sources. Each

source can be accessed dependent on the users' access rights specified by the administrator.

- Integrated Scheduler. ProFiler now has the ability to start and stop recording on a weekly day-part schedule. This allows you to record specific shows only or record them with different storage policies or bitrates.

Compatibility

ProFiler v2 server is backward compatible with all files recorded by a previous version of ProFiler. Server and client versions cannot be mixed however. A version 2 server can only be accessed with version 2 client software. Also, version 2 client software should not be used with older versions of the server.

MP3 Files and ProFiler

MP3 encoding is the best method for squeezing audio down to manageable size for the Internet or multimedia use. It's based on internationally accepted MPEG Layer-3 compression, the universal standard for audio transfers via ISDN at broadcast stations and recording studios. MP3 lets you control the amount of compression, depending on transmission, storage, or audio quality requirements.

Telos ProFiler uses genuine MPEG Layer-3 encoding algorithms developed by Fraunhofer-Geshellschaft (Fhg), an internationally respected audio research laboratory. The Fhg algorithms are the reference against which all others are measured.

ProFiler Application

The Telos ProFiler application consists of the software components listed below:

- Server (Recording and Storage component)

- NTP TimeSync

- Live Player (Client component)

- Archive Player (Client component)

- Status Monitor (Management utility)

Each component is briefly described below:

Server

The Server component is responsible for:

- Encoding the audio stream received from the sound card,

- Storing the encoded data on the hard drive,

- Backing up the data to a network drive, tape drive, or remote FTP server, and

- Making the audio data (either live or stored) available to the live player or archive player.

Operation of the Profiler Server is discussed starting on page 13 of this manual.

NTP TimeSync

NTP TimeSync is a utility designed to keep the clock on the ProFiler PC accurate by synchronizing it against an NTP time server on your LAN or via the Internet. Keeping the PC clock accurate is very important since all ProFiler files are time stamped using this clock. Of course there are other options for keeping your PC clock accurate, if you prefer.

The operation of NTP TimeSync is discussed starting on page 36.

ProFiler Live Player

The Live Player is a client application that allows the user to listen to a live audio stream as it is recorded by the Server.

Note that the Live Player receives a continuous audio feed at the configured bitrate, regardless of the skim switch state.

The user interface will seem familiar to users of the Windows Media player. It displays the date and time for the audio stream relative to the date and time set on the server. For example, when a user in California is listening to a live stream generated on the East Coast, the player would show the East Coast date and time.

Please see the *ProFiler Client User Guide* document for more details about the Live Player.

ProFiler Archive Player

The Archive Player is a client application used to browse and listen to the audio stored on the server from any networked computer (on the local LAN or over the Internet).

Using Archive Player, the user can extract audio portions and save them locally as ProFiler (AP3) files. AP3 files retain timestamp information for each segment, along with any user-entered notes. They can be opened at a later time with Archive Player. AP3 files can also be played by any MP3 player or be converted to .WAV files for further editing.

Please see the *ProFiler Client User Guide* document for more details about the Archive Player.

Status Monitor

The Status Monitor provides a way for the user to see that the ProFiler Server is operating properly. It displays the audio levels as received by the Server from the sound card, the disk space used/available, and the number of clients currently connected to the server.

Please see the *ProFiler Client User Guide* document for more details about the Status Monitor software.

2 Installing ProFiler

The ProFiler installation consists of the following steps:

1. Install the Telos ProFiler audio card(s).

2. Connect audio input/output and contact closure inputs to the card.

3. Install audio driver software.

4. Install ProFiler Server software.

Installing the Telos ProFiler Audio Card

ProFiler software is bundled with one or more Telos balanced-audio PCI cards compatible with Windows Windows 2000 and Windows XP. Balanced-audio input and output is provided via a DB9 connector. Each Telos card also provides four contact closure detection inputs through a separate DB15 connector.
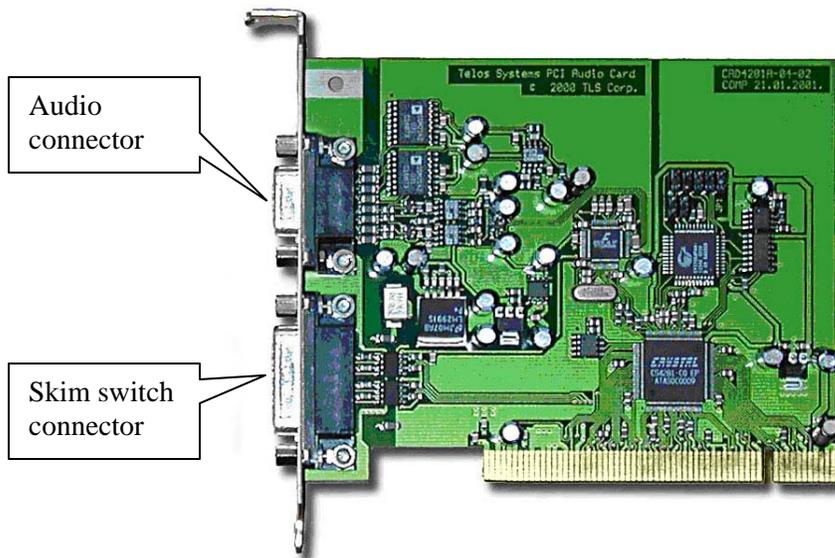
Follow these steps to install the Telos card on your Windows 2000 PC:

1. Turn off power to your PC and unplug it from the power outlet.

2. Remove the cover and locate an empty PCI slot on the motherboard.

3. Install the Telos ProFiler card in the empty PCI slot and secure it with the chassis screw removed in step 3.

Connect Audio Input/Output and Contact Closure Detection Inputs

There are two cable connections required from the audio source to the PCI audio card:

- Audio input and output (DB9 connector), and

- Contact closure inputs (DB15 connector).
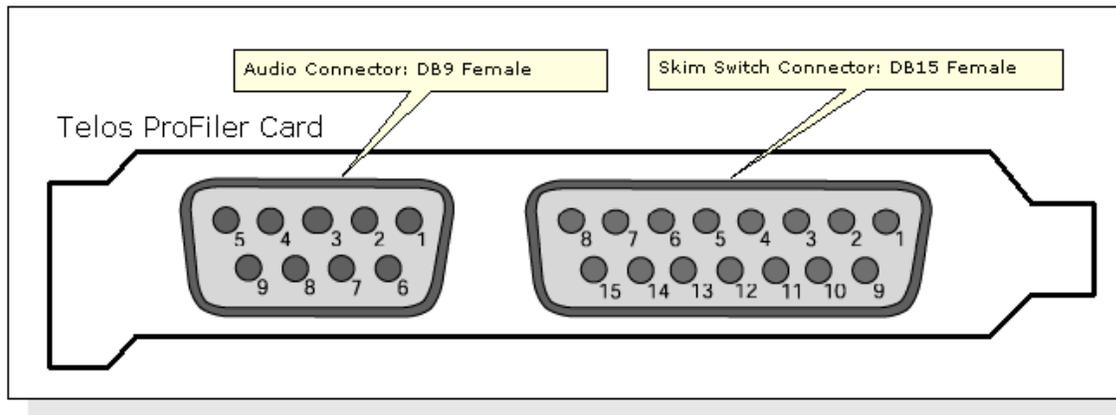
Audio Input and Output. You may wish to connect your audio input and output using the optional DB9 to XLR cable accessory from Telos (part #2091-00060) or you may choose to build your own audio cable. Refer to the Audio Cable Wiring Diagram on page 39 of the Appendix for details on how to build the audio cable.

Contact Closure Inputs. Since the wiring for each facility is likely to be very different, a custom cable must be built for the contact closure inputs. The Contact Closure Detection Inputs Wiring Diagram on page 42 of the Appendix illustrates how to build this cable.

Install Audio Driver Software

IMPORTANT TIP: *You should install the Telos ProFiler hardware card(s) in the computer prior to installing the software driver.*

NOTE: *You must log in as Administrator before you install the Audio Driver Software!*

Windows 2000 automatically detects that a new audio card has been installed and displays the following dialog:

To install the driver:

1. Click the *Next* button.

2. Select *Search for a suitable driver for my device (recommended)* then click *Next*.
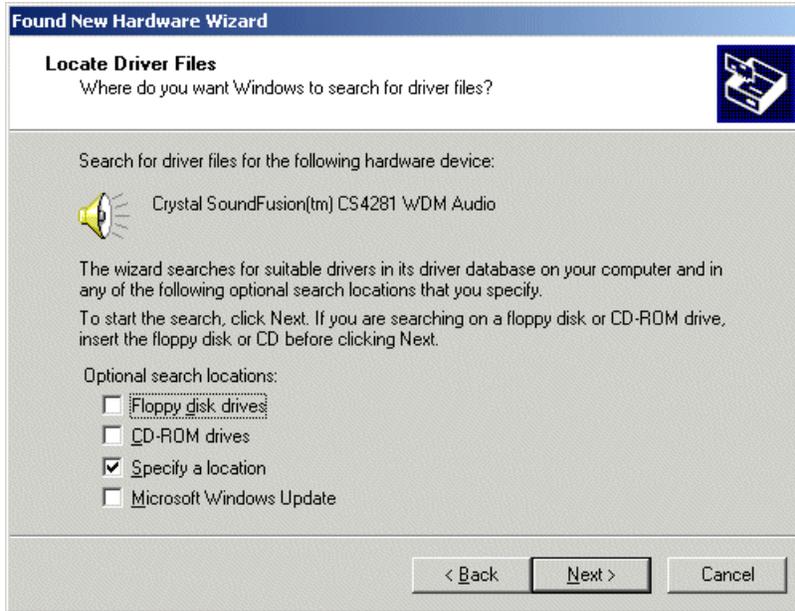
3. Select *Specify a location* and make sure the other options are unchecked. Click *Next*.

4. Enter the path shown above. Make sure to replace D: with the letter of your CD-ROM drive. You could also click the *Browse* button to search for the "Driver-Win2000" directory yourself.

5. Click the *OK* button.
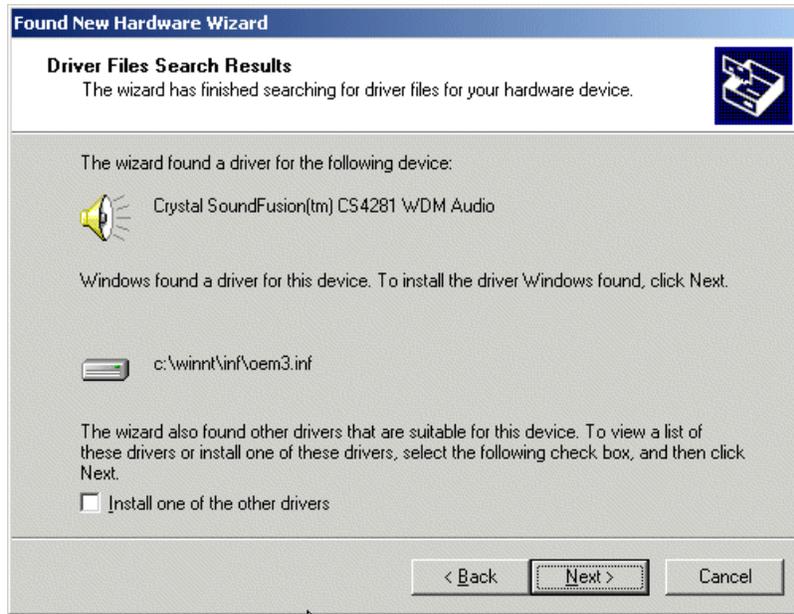
6. When this dialog is shown click the *Next* button. On some systems, a warning dialog may be displayed about a "Microsoft signature" not being present in the driver. If this warning dialog is shown, click *Yes* and proceed with the install.

    After a number of files are copied, the following dialog is shown to inform you that the driver installation is complete.

7. Click the *Finish* button to complete the driver installation.

8. You may verify that Windows can see the audio card by going to Control Panels and selecting the *Sounds and Multimedia* applet. Click on the *Audio* tab then click on the drop down arrow for the *Sound Playback* list box. You should see one or more new entries prefixed by "Crystal SoundFusion(tm)", one for each Telos card installed. If you do not see the new devices in the list then there has been a problem with the driver installation. Review the steps above to make sure all steps were appropriately followed.

9. Click Cancel when done with the *Sound and Multimedia* applet. The audio driver installation is now complete.

10. Repeat the steps above for each Telos card installed.

Server Software Installation

After installing the Telos card and audio driver and making the proper connections, you must install the Telos ProFiler Server software. This software will allow you to configure and control audio recording.

To install the ProFiler Server software:

1. Make sure you are logged in with administrator privileges before you proceed with the installation.

2. Insert the CD-ROM in the drive. If you have auto-run enabled on the drive, the CD-ROM browser will start automatically. If the CD-ROM browser does not start in a few seconds, run the *ProFiler Setup.exe* application from the CD-ROM.

3. Click the *Install Server Software* button.

4. A standard software installer is then displayed. You will be given the option to select the destination directory for the application and the program group name. If you're not sure about these choices, click the *Next* button to accept the defaults.

5. Once the programs have been successfully installed, click on *Finish*.

This ends the installation.

3 Using the Server Software

Starting the Server

To start the server:

1. Click the *Start* button on your desktop toolbar.

2. Click *Programs*.

3. Select *Telos Systems* then *ProFiler2*.

4. Choose *Start Server*. The main server window is displayed.
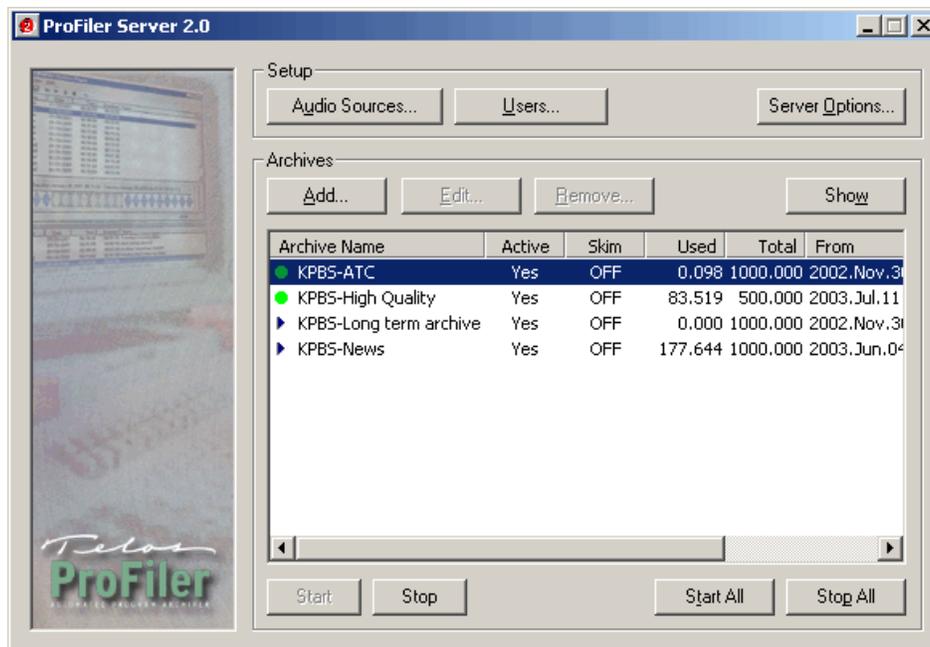
Configuring the ProFiler Server

After you install ProFiler server you generally go through these steps to configure the software and get it ready for use:

1. **Define your audio sources:** When you define an audio source you specify a friendly name for each ProFiler audio card. You may also choose to split a stereo input into two separate mono inputs.

2. **Define archives:** For each audio source you can create one or more archives. Each archive can be assigned different record and storage policies. For example, separate

archives can be scheduled to store different shows for the same radio station at different audio quality settings. One archive could keep the audio material for a short period while another may keep it for a much longer period.

3. **Define users:** Access to ProFiler is controlled by user name and password. The administrator may grant or revoke individual access rights per archive.

4. **Set server startup options:** Here you choose the server port to use for ProFiler. You may also have ProFiler start automatically when Windows starts.

5. **Start archives and monitor recording:** Once you finish configuring the server you start the defined archives to begin recording or to enable the scheduled actions. This is where you adjust audio levels and monitor the state of the recording.

Defining Audio Sources

When you define an audio source you assign a friendly name to one of the Telos audio cards. This makes it easier to manage the audio sources especially when using multiple cards. Follow these steps to define audio sources:

1. Click the *Audio Sources* button on the main server window to bring up the *Audio Source Manager*:
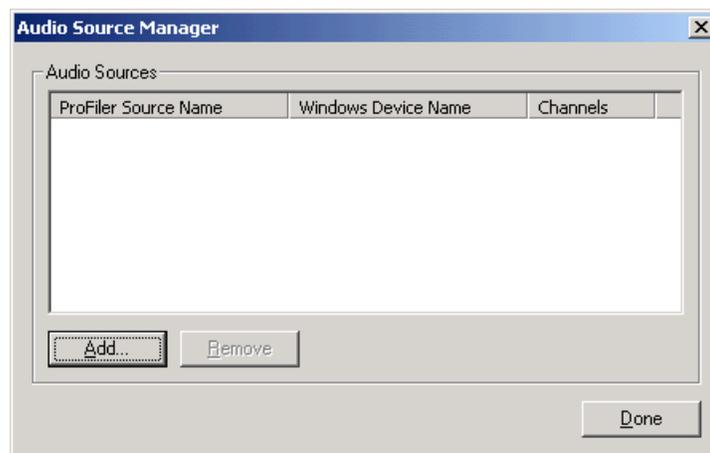
2. Click the *Add* button. This will display the following dialog:

3. Select the desired Windows audio device then enter a descriptive name in the *ProFiler source name* field.

4. You may use an audio card as a single stereo source or you may split it into two mono streams. Use the *Channels* field to select the desired mode then click the *OK* button when done.

5. Repeat these steps for each Telos audio card you have installed in the system.

Defining Archives

An archive definition includes all recording, storage and scheduling parameters associated with the archive. Click the *Add* button on the ProFiler server main window to bring up the Archive Options dialog. The individual options are organized under separate tabs. Click the desired tab to move from one page to the next.

Follow these steps to configure the archive options:

1. On the first page enter a descriptive name for the archive. Under *Start Options* you may choose to have this archive start automatically when ProFiler is started (a good choice for most cases) or you may choose to start the archive manually. We'll leave the *Schedule* section alone for now. Take a look at the Scheduled Recording section on page 23 for details on setting up a recording schedule.
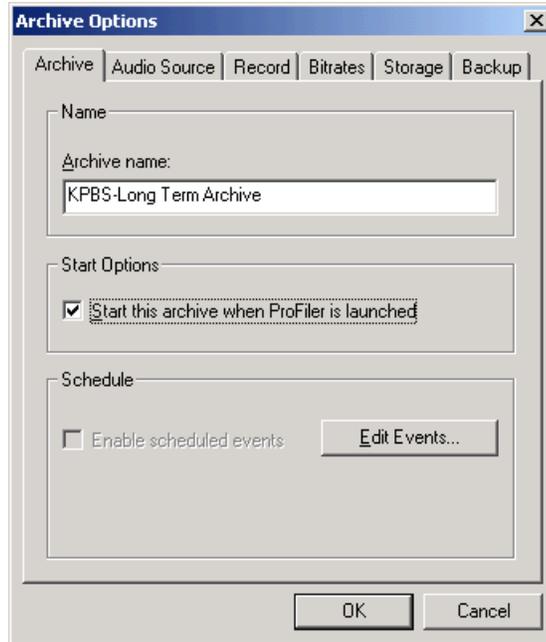
2. Click the *Audio Source* tab to move to the next options page. From the *Audio Device* drop-down list we select the audio source we want to use for this archive.

> **NOTE:** *If you select "<none>" for the audio source this archive becomes a "playback only" archive. This means that no new audio is recorded but users may continue to access already recorded material.*

3. On the *Record* page we're going to choose continuous logging. This will record the audio without interruption for the entire duration that the archive is active.
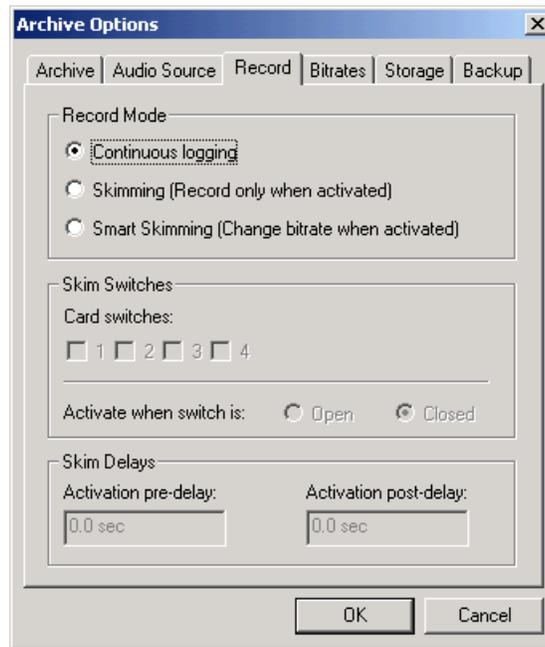
4. On the *Bitrates* page we get to choose the data rate for the MP3 encoding. ProFiler provides you with bitrates from 8 to 320 kbps. The higher the bitrate, the higher the audio quality but the audio data also has higher storage requirements. The *Storage Space vs. Bitrate calculator* is a handy tool to allow you to choose the appropriate bitrate given the amount of disk space you have available. Here we choose 32 kbps for the recorded stream and 24 kbps for the live player stream.
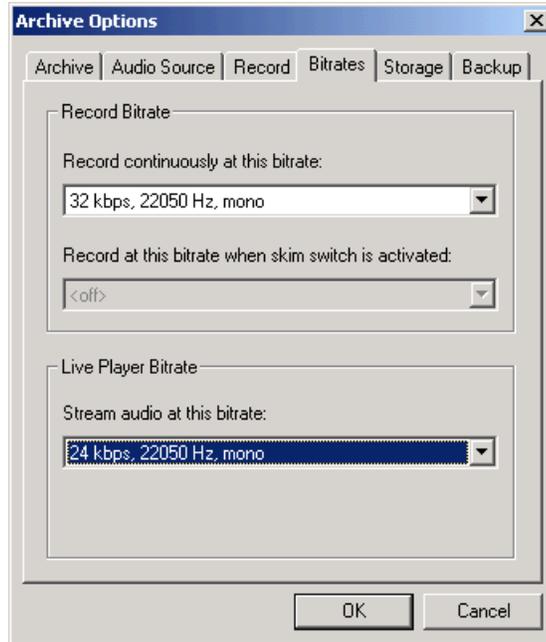
5. On the *Storage* page we specify the destination directory for the archive along with the storage limits. For this archive we set aside a maximum of 35 GB and we want to keep at most 100 days. The disk space and number of days must be set with some care to achieve the desired results. For example, if you want to keep 100 days but you set the disk space to a small amount then ProFiler will begin to recycle old files long before 100 days are recorded. Again, the *Storage Space vs. Bitrate calculator* can help determine the right values here. Most of the time you should allow ProFiler to manage the storage space by erasing old files when limits are reached. This will ensure that audio will be recorded continuously. Under special circumstances you may want to manage the storage space manually. In this case you can tell ProFiler to never erase any files for this archive. If ProFiler reaches the specified limits recording will stop.
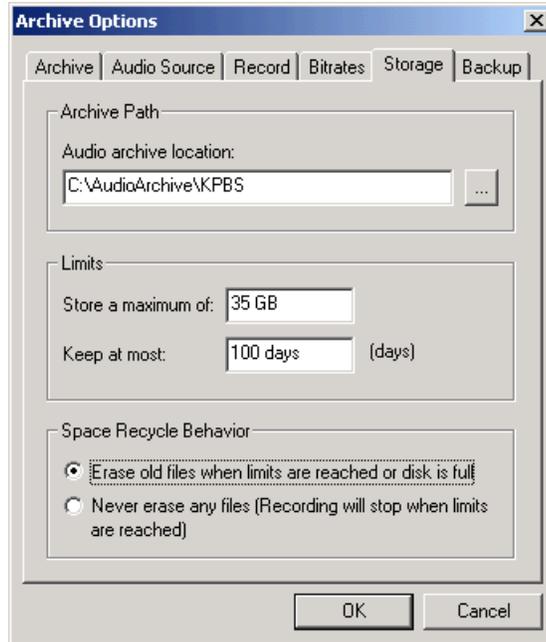
NOTE: *If you have used a previous version of ProFiler you may notice that there is no entry to specify the log file directory. In version 2.0 log files are always written to a Log subdirectory under the main archive directory. This allows you to keep all archive files (logs and audio) under a single directory.*

6. On the *Backup* page you can select one or more locations for backing up audio files. ProFiler can back up audio files to multiple locations. It can back up to a separate hard drive, a network drive, a mounted tape or Jaz drive, or even to a remote server via FTP. Take a look at the Backup Details on page 29 for details on adding backup destinations.
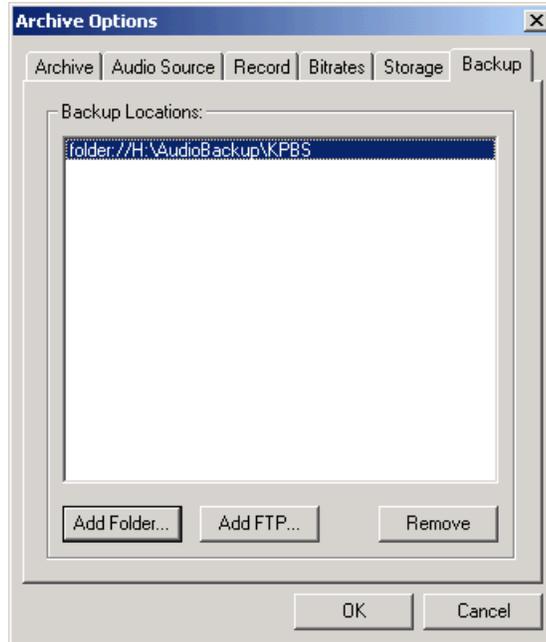
7. You are now done defining the archive. Click the *OK* button to save the choices you have made. If ProFiler detects any problems it will display a message and give you a chance to correct the problem.

Defining Users

All remote access to the ProFiler archives or live streams is controlled by user name and password. Click the *Users* button to bring up the User Manager window to define users and manage individual archive rights. ProFiler does not ship with any default users; you must create at least one user if you wish to allow remote access.

Follow these steps to define a new user:

1. Under *User Mananger* click the *Add* button.
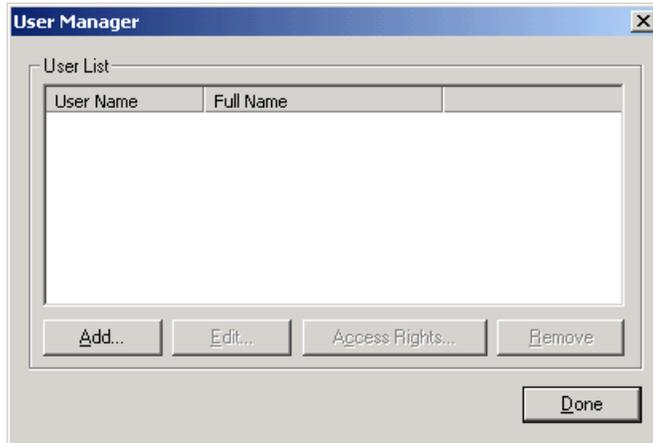
2. Enter the login name, full name and password for the user then click the *OK* button. Please note that the login name and password are not case sensitive.
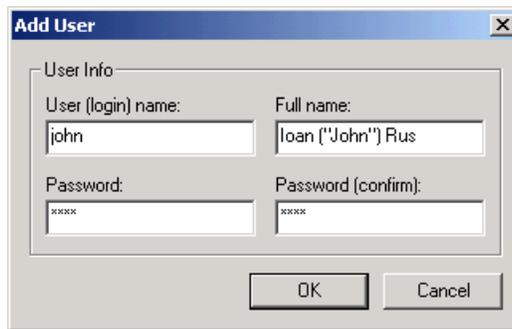
3. The *User Access Rights* window is displayed next. Here you can grant or revoke access rights to individual archives for this user. Click the *Done* button when finished.
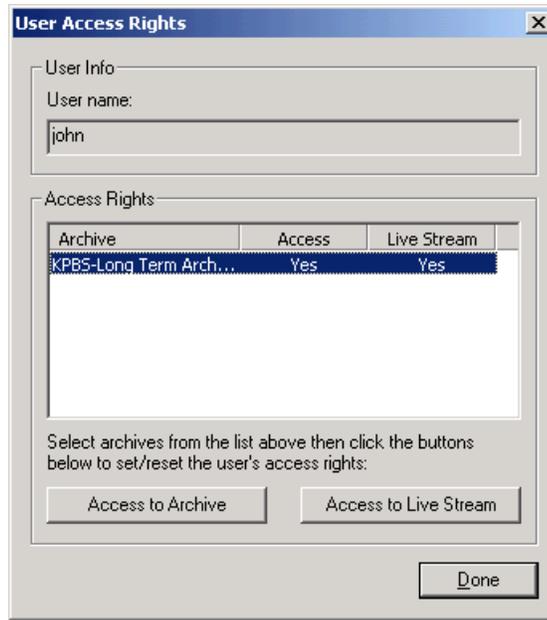
4. You have now defined a new user. User Manager shows all users known to ProFiler. You may change user information or grant / revoke archive access rights at any time by selecting the user and clicking the appropriate buttons.
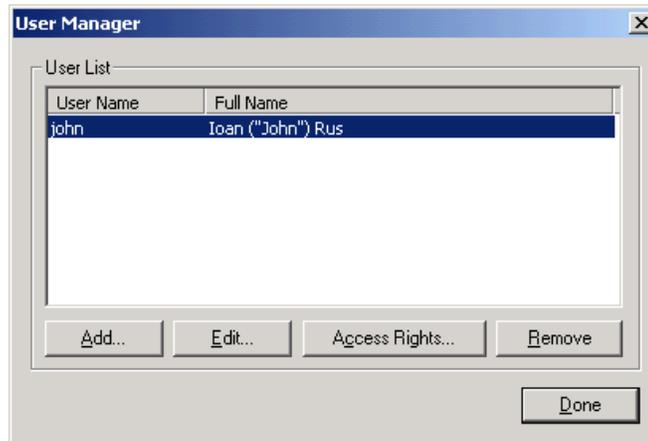
5. Repeat the steps above to add additional users. Click the *Done* button when finished.

Server Options

Under server options you can specify the server port number and application startup option.
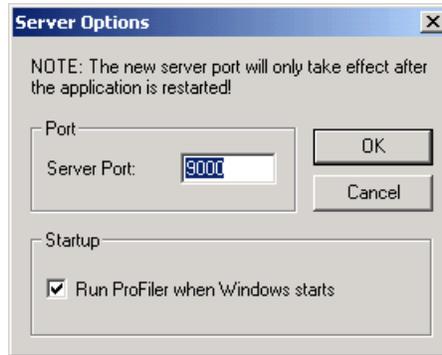
The *Server Port* is the TCP/IP port used by client applications to connect to this server. The default value is 9000 but you may choose any other value between 1 and 65,535. Make special note of the server port you assign, as you will have to provide the port number along with the host address of the server PC to users wishing to connect to the server.

IMPORTANT TIP: *If you're not familiar with port number ranges please use port numbers above 5000 as some values less than 5000 may already be in use by other applications on your system.*

You may check the startup box to have ProFiler start automatically when Windows is started.

Scheduled Recording

The scheduler allows you to start or stop recording at different times. This allows you to select a specific show or time of day to record. Follow these steps to add events and enable the scheduler:

1. On the first page of *Archive Options* click the *Edit Events* button. The following dialog is displayed:
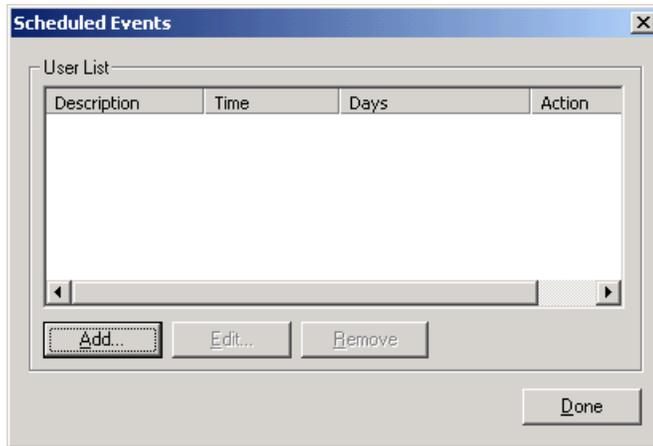
2. Click the *Add* button to add an event. The new event dialog is displayed:
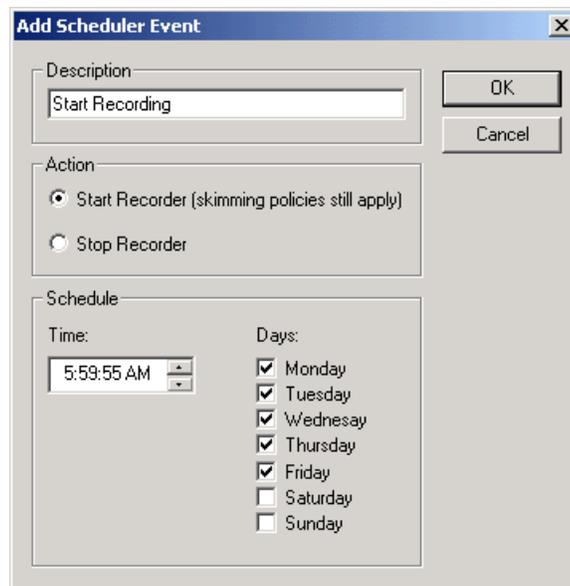
3. Enter a description of the event then the action and start time. Here we want to start recording at 6 AM but choose to start five seconds early to make sure we don't miss the start of the show. Select the days when this event will occur. Click *OK* when done.

4. Click the *Add* button again to add the stop event. Choose the *Stop Recorder* action and an appropriate time for the event.
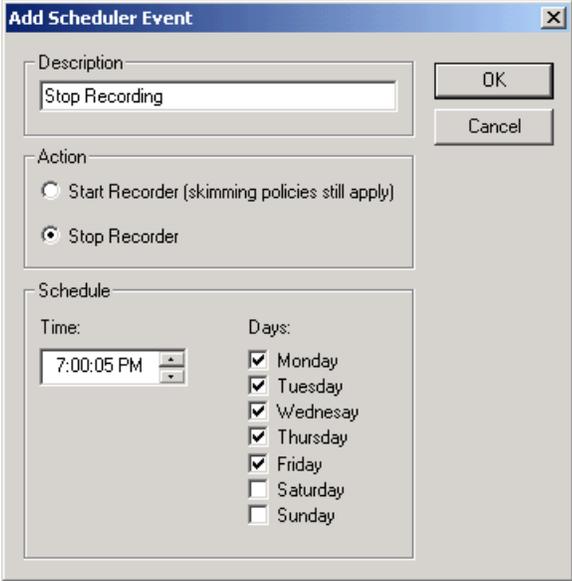
5. We now scheduled the recording to start at 6AM and stop at 7PM (with extra 5 seconds at start and stop). Click the *Done* button when finished adding events.
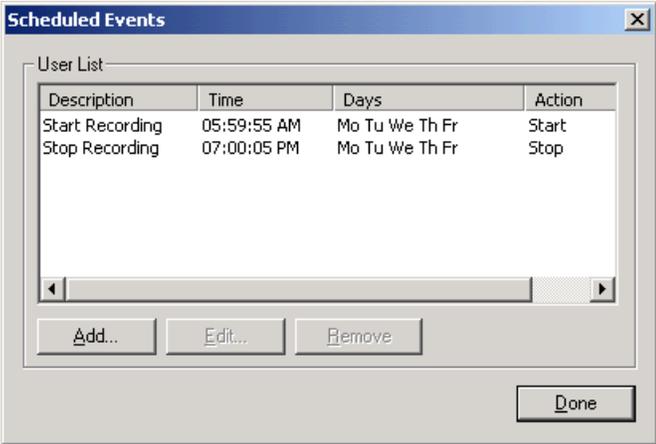
6. When you return to the *Archive Options* dialog make sure to check the *Enable scheduled events* checkbox. Unless this box is checked the events entered will have no effect.
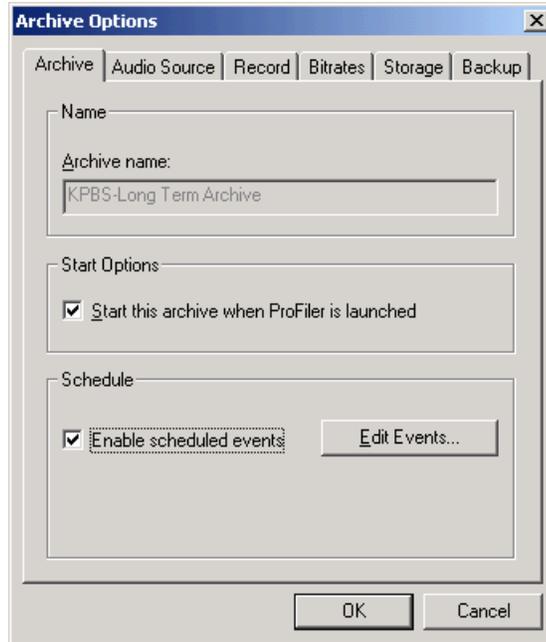
7. This archive is now set to record only from 6AM to 7PM according to the schedule. Note that if you selected one of the skimming record modes the state of the skim switches is still obeyed during scheduled recordings.

Recording Options

Recording Mode

The Record Mode box offers the three choices shown below:
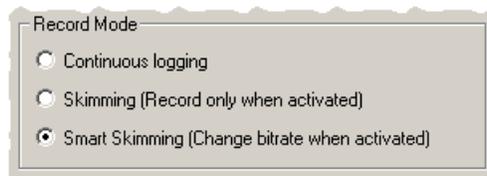
*   **Continuous Logging**: Audio is recorded at the same bitrate continuously. Select the desired bitrate on the *Bitrate* tab.

*   **Skimming**: Audio is recorded only when the selected skim switch is activated. Select the bitrate and skim switch on the *Bitrate* tab.

*   **Smart skimming**: By selecting this, ProFiler will change bitrates when the skim switch is activated.

Skimming Inputs

- **Card switches**: Enabled only when *Skimming* or *Smart skimming* has been selected. You may use any of the contact closure detection switches to control the skimming logic. You may also choose more than one switch input if desired. The same switch input can be used for multiple archives as long as the archives read audio from the same Telos card.

- **Activate when switch is**: In most cases *Closed* should be selected. This will activate skimming when the switch is closed. If *Open* is selected, the switch logic is reversed; skimming is activated when the switch is open and inactive when it is closed.
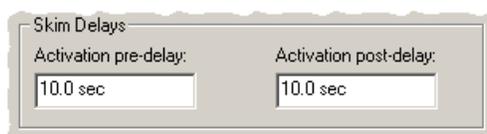
Skim Delays

- **Activation pre-delay**: ProFiler gives you the option to start recording or change the bitrate some time <u>before</u> the talent microphone switch is activated. This way you can record the context of the audio as well. The pre-delay amount determines how far in advance the recording begins before the switch is activated[1].

- **Activations post-delay**: When the talent microphone is turned off the recording continues for a duration specified by the post-delay parameter. Used to make sure the talent portion is not cut off too suddenly and to provide context for the audio segment.

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[1] But how is this possible you ask! The software will buffer (delay) the recorded audio by the Activation pre-delay amount. This allows it to record to disk audio received <u>before</u> the switch is activated.

Bitrate Selection
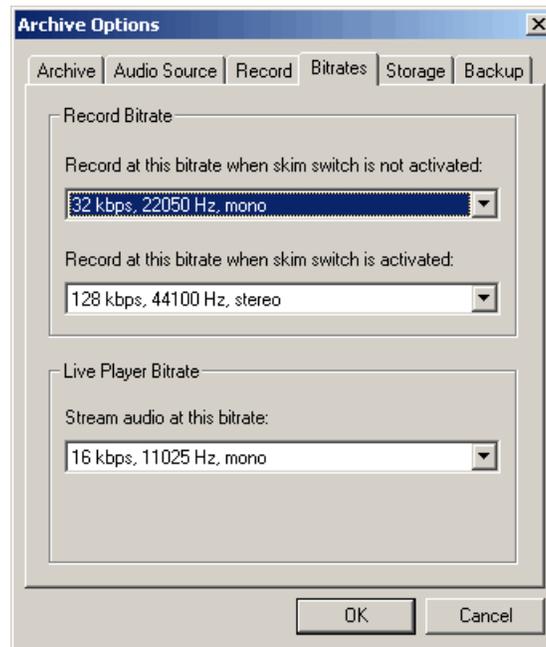
- **Record at this bitrate when skim switch is not activated**: Only enabled if *Continuous logging* or *Smart skimming* is chosen. The bitrate determines how much data will flow for each second of audio: this ultimately determines the audio quality. The higher the bitrate, the better the audio sounds, but more disk space is used.

- **Record at this bitrate when skim switch is activated**: Only enabled if *Skimming* or *Smart skimming* is chosen. This is the record bitrate used when the skim switch is activated.

- **Stream audio at this bitrate**: The bitrate should be chosen depending on the bandwidth available to the listeners. If you have listeners that are connecting over modems, you should keep the bitrate at about 16-24 kbps. If all the listeners are connecting only through a LAN, you may choose to go higher. Remember that the higher the bitrate, the better the audio will sound, however more bandwidth is consumed to listen to the live stream. A higher bitrate also uses more CPU power. Although this may not be an issue if you're only recording one channel, it may become one if you are logging multiple channels.

Backup Details

Select one or more locations for backing up audio files. ProFiler can back up audio files to multiple locations. It can back up to a separate hard drive, a network drive, a mounted tape or Jaz drive, or even to a remote server via FTP.

> **Add Folder**. Click this button to add a backup location on another hard drive, a network drive or a mounted tape or Jaz drive. The following *Select Backup Folder* dialog is displayed.
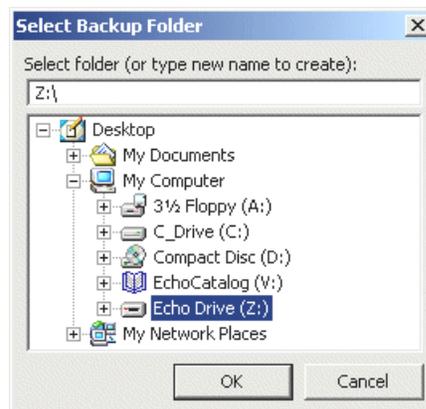
> **Add FTP**. Click the *Add FTP* button to enable backup of audio files to a remote FTP server. The following dialog will be shown:
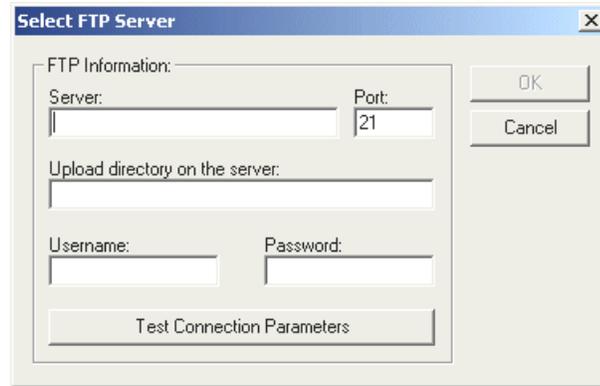
Follow these steps to add an FTP server as a backup destination:

1. Enter the server IP address and port (the default FTP port for most servers is 21).

2. You may optionally specify an existing directory path where the files are to be stored.

3. Enter the user name and password having upload rights on this particular FTP server.

4. Click the *Test Connection Parameters* button. The program will attempt to upload a small text file to the server to test the parameters provided. If it succeeds, the *OK* button will become enabled and you will be able to proceed.

NOTE: *The program places no restriction on the number of backup destinations you may add. Care must be exercised however to ensure that the program is able to copy each file to all backup destination in real-time or faster. This means that a 15 minute file segment should take less than 15 minutes to backup to all backup destinations combined. Also note that backing up to FTP servers or network drives will consume a certain amount of bandwidth on your network. Depending on the amount of bandwidth available from the start, this may prevent the Archive or Live players from playing uninterrupted streaming audio. It is best to backup to a local device such as a tape or Jaz drive.*

Monitor Recording

During recording you may wish to monitor the state of individual archives, audio level or storage space used and available. The main server window displays a brief summary of all archives defined.
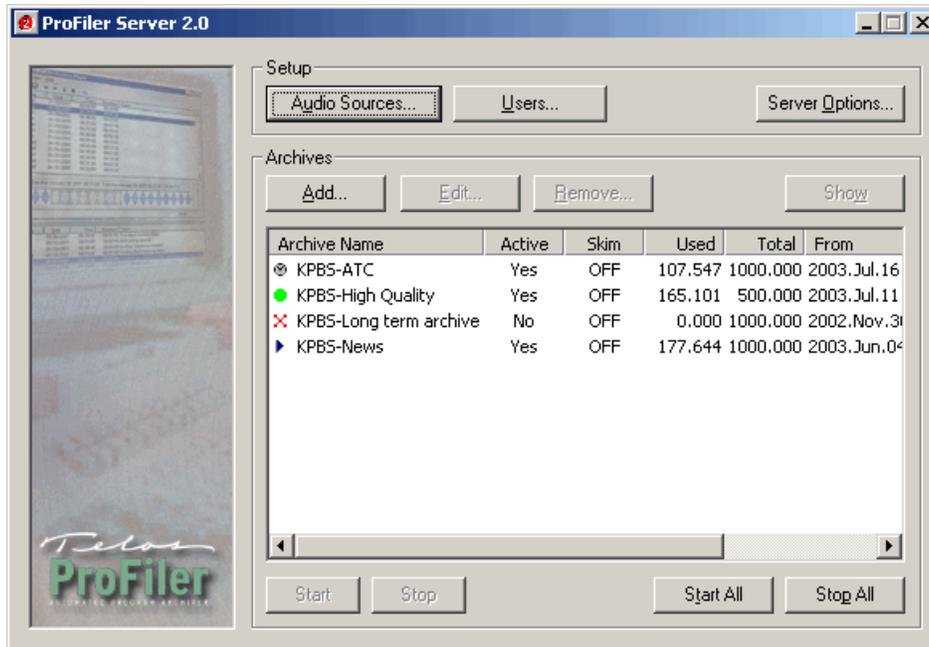
In front of each archive name there is an icon that indicates the state of the archive. The following icons are defined:

Icon	Meaning
✖	Archive is stopped. No audio is being recorded. The archive cannot be accessed remotely.
●	Archive is active and may be accessed remotely. It is recording according to the recording mode and state of skim inputs.
◉	Archive is active and operating on schedule. It may be accessed remotely. Recording takes place according to the schedule, the recording mode and state of skim inputs.
▶	Archive is active but not recording because no audio source was specified. Archive contents may be accessed remotely.

Another way to view archive information is through the archive monitor window. The archive monitor window shows all archive information at a glance. To display the monitor window select the archive of interest on the main server window and click the Show button. Multiple windows can be displayed at the same time. Click the ✖ button in the corner to close the window (this does not stop the archive, it just hides the window).
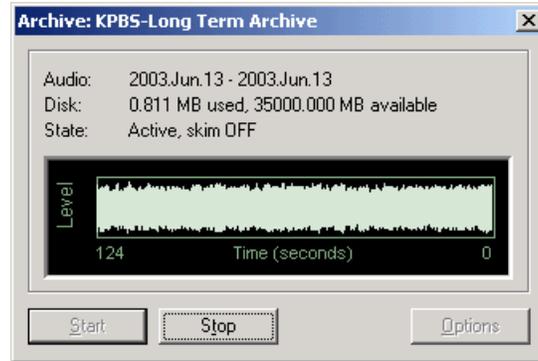
The top part displays the date range available for this archive, the disk space used and available and the current state. The waveform window displays the level of the received audio. Take a look at the next section, *Recording Live Broadcasts*, for details on how to select the input source for the card and how to adjust the recording level.

4 Recording Live Broadcasts

Before you can begin to record audio you have to make sure the appropriate source is selected in the Windows' multimedia mixer control. You then have to adjust the recording level to ensure that it is loud enough without clipping. The sections below describe the steps required.

Select the Audio Input Source

1. Plug in the audio feed.

2. Double-click the *volume* icon in the task bar to bring up the *Volume Control Mixer*.
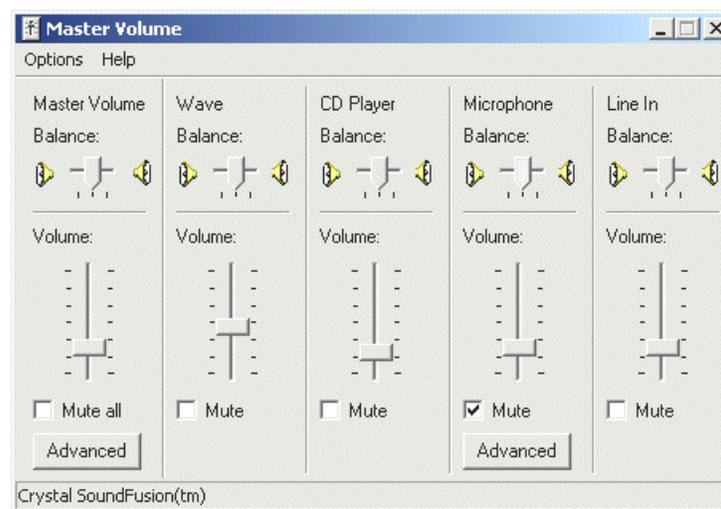
3. From the *Options* menu, select *Properties* to bring up the following dialog:
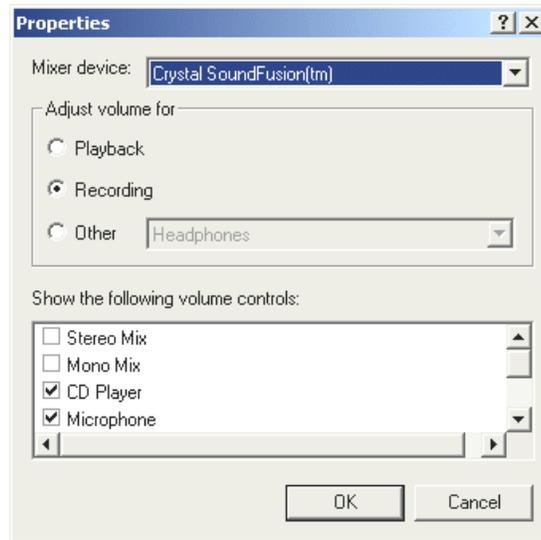
4. Select the "*Crystal SoundFusion (tm)*" mixer device for the Telos audio card. If you have more than one card installed in the PC the device names will have a number suffix appended to the name. Select the *Recording* radio button. In the list box below make sure that the *CD Player* has a check mark next to it then click the *OK* button.

5. The following *Recording Control* dialog will now be displayed. On your PC there might be other panels shown (or hidden).
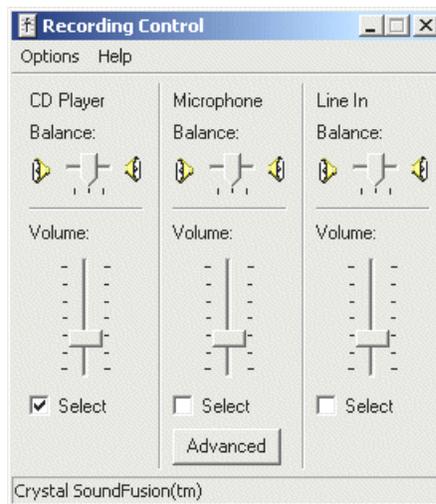
6. Make sure the *CD Player* is selected as shown above. The Telos audio card uses the CD Player input since it provides the lowest noise, highest quality input available. The same dialog is used to adjust the recording level. It may be preferable to choose a middle value on the *Volume* slider, and then adjust the recording level by controlling the source audio

level since you are likely to have more control there. At this point, leave the *Recording Control* dialog open since you may have to return to it to make additional adjustments.

Adjust the Recording Level

To adjust the recording level:

▪ Select the archive for which you wish to adjust the audio level then click the *Show* button on the ProFiler server window. Make sure the archive is active. You should see the audio level area start to fill in as shown below.
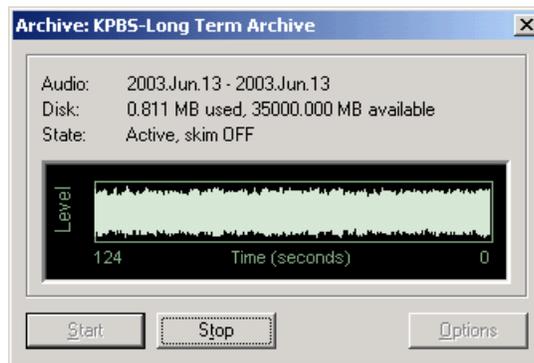
The waveform may not look as above on the first try. It may be either too low or too loud. You need to adjust the source audio level until the waveform stays within the bordered area without constant clipping.

NOTE: *It is often helpful to listen to the stream you are adjusting using the Live Player. This will give you a good idea of how the recorded audio will sound.*

If you experience difficulties while attempting to adjust the recording level, the table below describes some common problems and their solutions:

Problem	Solution
There is no audio signal shown at all	Make sure you selected the appropriate source input through the Windows' mixer control. See the description on page 32 for more information.
The audio signal is too faint	The recording level is too low. Increase the source level, or turn up the mixer control for the source (or both) until the waveform looks similar to the image above.
Audio waveform looks like a solid block	The recording level is too loud and you are seeing severe clipping. Reduce the source level or turn down the mixer control for the source (or both) until the waveform looks similar to the image above.

Testing the Server

An audio waveform displayed in the status window is a good indication that the ProFiler server is receiving and recording audio.

You can test the network connection to the server by installing the ProFiler client software on another PC on the same network, then connect and listen to the audio using the Live Player.

Make sure you create at least one user before you attempt a remote connection. See Defining Users on page 20 for information on adding new users to the system.

The client software will prompt you for the server address, user name and password. The server address uses the following format:

```
server_host_name_or_ip_address:server_port_number
```

The first part is the host name of the server PC. You may use the host name provided this name is registered with DNS. If you're not sure of this you can always use the PC's IP address instead. Following the name or IP address is a colon character then the port number you assigned to the server.

Running the Server

The server is designed to run unattended on the ProFiler PC. You may leave the server window up or you may choose to minimize it. When minimized, the server goes to the system tray area in the task bar:

Click on the *ProFiler* icon to show the program window again.

All server activity is written to log files in the archive directory. There is one log file per day, and log files older than 30 days are erased. If you would like to keep all log files, you should back them up before 30 days have passed.

5 Synchronizing the PC Clock

The ProFiler uses the PC clock to time stamp all audio files recorded. It is therefore very important to ensure that some method is used to maintain accuracy of the PC clock.

NOTE: *If you are already synchronizing the clock on the ProFiler PC using another method, you do not need to install and run NTP TimeSync.*

To assist with clock synchronization, the ProFiler CD includes the NTP TimeSync application. It uses the Network Time Protocol to request time information from an NTP server on you LAN or over the Internet then updates the PC clock at the interval specified.
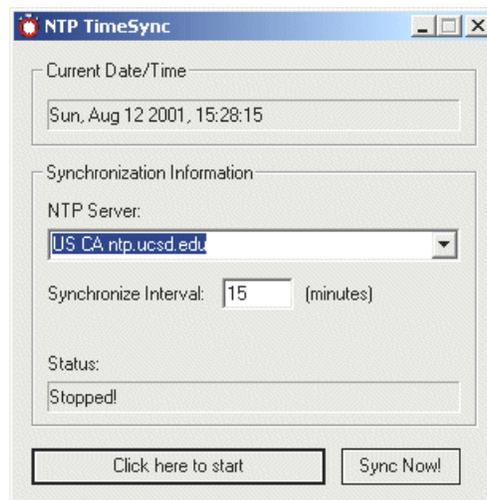
To use NTP TimeSync, follow these steps:

1. Start the NTP TimeSync application.

2. In the *NTP Server* combo box you may choose a server address or enter a new address. The addresses that ship with the application are listed in order by country code followed by state abbreviation (for US only). Select the address of a server nearest to you. The screen image above shows an NTP server located in California. If you have an NTP server on your LAN you should use that server's address.

3. The default *Synchronize Interval* of 15 minutes works well for most cases. You may change to another value if needed.

4. Click the *Click here to start* button. The application will query the NTP server selected as often as specified by the *Synchronize Interval* and will update the PC's clock. You may click *Sync Now!* at any time if you wish to synchronize the clock manually.

5. Minimize the TimeSync application and leave it to run in the background. When minimized the application will be shown in the tray area of the task bar.

6. Click on the red clock icon to show the program dialog again.

Glossary

AP3: MP3-compatible format used by the archive player to store multiple annotated and time-stamped audio segments in a single file. If the file with an .ap3 extension is renamed with an .mp3 extension it can be played directly by most MP3 players (but the annotations will not be displayed).

Bandwidth(1): /Audio Bandwidth/ The range between the lowest and highest frequency a piece of equipment can carry. Very high-quality audio typically has a bandwidth of 20 kHz. FM and television audio (in the U.S.) have a bandwidth of 15 kHz. Telephones have a bandwidth of 3.5 kHz.

Bandwidth(2): /Data Bandwidth/ Bandwidth is also used to describe the data-carrying capacity of a communication channel. It is measured in bits-per-second (bps), or more often, in thousands of bits-per-second (kbps).

Bitrate: The amount of bandwidth consumed by a particular stream. It is measured in bits-per-second (bps), or more often, in thousands of bits-per-second (kbps). Often used to describe the amount of compression applied by MP3 encoding. The bitrate for an uncompressed, 44.1 KHz stereo audio stream using 16 bits per sample is 1411.2 kbps. Using MP3 encoding you can reduce the bandwidth for this stream anywhere from 8 to 320 kbps.

Hertz, Hz: Number of cycles per second. In analog audio, this indicates the pitch of a sound; in digital audio, it may refer to the number of samples per second when the signal is digitized.

ISDN: Integrated Services Digital Network, a telephone technology that allows up to two 64 kbps digital connection over the same kind of copper wiring normally used for voice-grade telephone. ISDN connections are more reliable as well as being faster than modem connections, but the technology isn't available in all areas.

kbps: One thousand bits per second. Note, this is a measure of individual bits, not the 8-bits *bytes* normally used in computer terminology.

kHz: One thousand Hertz (see above).

Streaming: Digital audio signals transmitted at real-time speeds or faster.

.wav, WAVE: the default format for audio files on DOS and Windows computers. The audio is often stored uncompressed using PCM encoding. WAVE files can also store encoded content, perhaps using MP3 or other compression method.

Appendices

Telos Card Pinouts
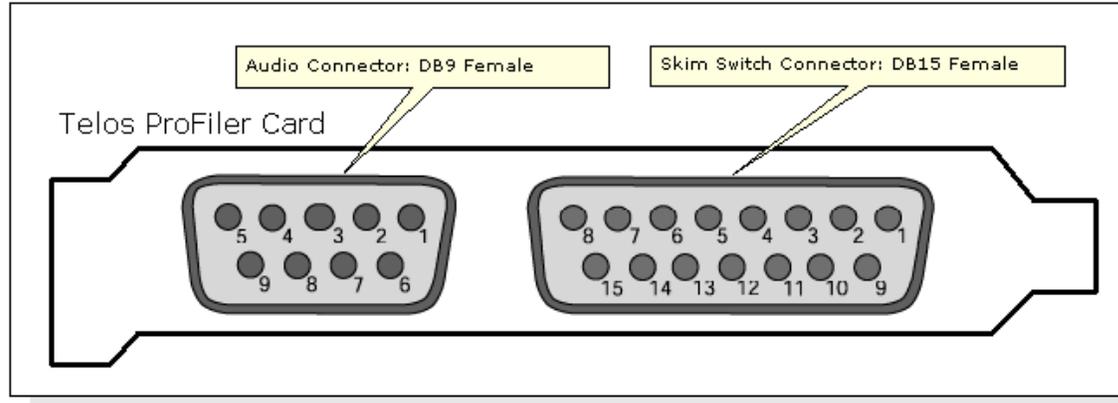
Table 1: Audio Connector (DB9 Female)

Pin	Function
1	Left channel audio IN (+)
2	Right channel audio IN (+)
3	Ground
4	Left channel audio OUT (+)
5	Right channel audio OUT (+)
6	Left channel audio IN (-)
7	Right channel audio IN (-)
8	Left channel audio OUT (-)
9	Right channel audio OUT (-)

Table 2: Skim Switch Connector (DB15 Female)

Pin	Function
1, 3, 4, 5, 6	Connected together
8	Common
11	Switch 1 input
12	Switch 2 input
13	Switch 3 input
14	Switch 4 input

Audio Cable Wiring Diagram

Telos ProFiler Audio Cable: Wiring Diagram
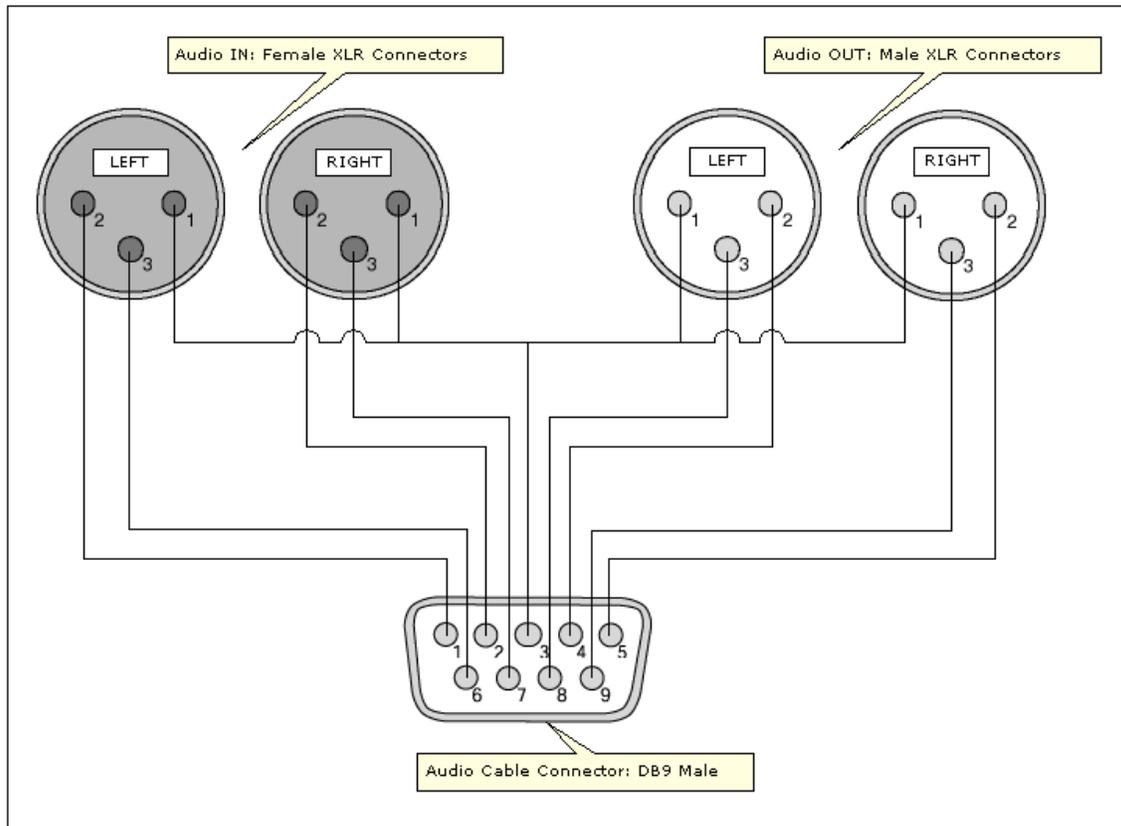
XLR Pins

Pin	Function
1	Ground
2	High (+)
3	Low (-)

Balanced to Unbalanced Audio Wiring Diagram

Balanced to Unbalanced Audio: Wiring Diagram

Male XLR Connectors

Female XLR Connectors

LEFT

RIGHT

Sleeve

Tip | Ring

LEFT

RIGHT

Sleeve

Tip | Ring
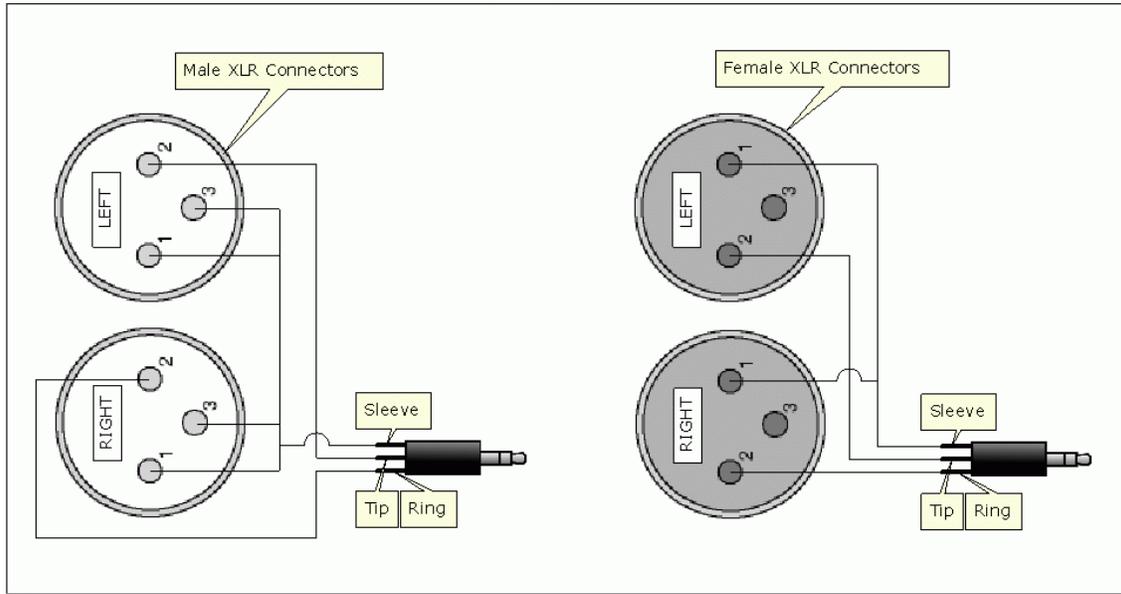
XLR Pins

Pin	Function
1	Ground
2	High (+)
3	Low (-)

Contact Closure Detection Inputs Wiring Diagram

Telos ProFiler Skim Switch Cable:
Wiring Diagram

sw1 sw2 sw3 sw4

1 2 3 4 5 6 7 8

9 10 11 12 13 14 15

Skim Switch Cable Connector: DB15 Male
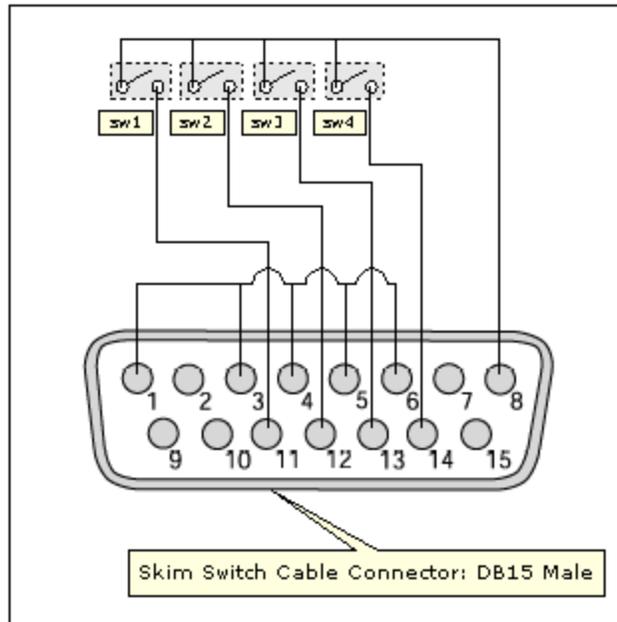
PROFILER AUDIO INTERFACE LIMITED WARRANTY

This Warranty covers "the Products," which are defined as the various audio equipment, parts, software and accessories manufactured, sold and/or distributed by TLS Corp., d/b/a Telos Systems (hereinafter "Telos Systems").

With the exception of software-only items, the Products are warranted to be free from defects in material and workmanship for a period of one year from the date of receipt by the end-user. Software-only items are warranted to be free from defects in material and workmanship for a period of 90 days from the date of receipt by the end-user.

This warranty is void if the Product is subject to Acts of God, including (without limitation) lightning; improper installation or misuse, including (without limitation) the failure to use telephone and power line surge protection devices; accident; neglect or damage.

> EXCEPT FOR THE ABOVE-STATED WARRANTY, TELOS SYSTEMS MAKES NO WARRANTIES, EXPRESS OR IMPLIED (INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE).

In no event will Telos Systems, its employees, agents or authorized dealers be liable for incidental or consequential damages, or for loss, damage, or expense directly or indirectly arising from the use of any Product or the inability to use any Product either separately or in combination with other equipment or materials, or from any other cause.

In order to invoke this Warranty, notice of a warranty claim must be received by Telos Systems within the above-stated warranty period and warranty coverage must be authorized by Telos Systems. If Telos Systems authorizes the performance of warranty service, the defective Product must be delivered, shipping prepaid, to: Telos Systems, 2101 Superior Avenue, Cleveland, Ohio 44114.

Telos Systems at its option will either repair or replace the Product and such action shall be the full extent of Telos Systems' obligation under this Warranty. After the Product is repaired or replaced, Telos Systems will return it to the party that sent the Product and Telos Systems will pay for the cost of shipping.

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