TELEX

RADIO DISPATCH PRODUCTS

Network Recorder Technical Manual

with Database Reviewer and Network Recorder Monitor up to and including Version 4.500

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Claims

No liability will be accepted for damages directly or indirectly arising from the use of our materials or from any other causes. Our liability shall be expressly limited to replacement or repair of defective materials.

Warning

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Do not open the unit. No user serviceable parts are contained within. Bosch cannot be responsible for damage. If the unit is opened, the warranty can be voided.

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CHAPTER 1

Introduction

Introduction

Radio Dispatch's Network Recorder is used to permanently archive radio traffic audio. Recording and archiving audio events is becoming a requirement for many radio systems. In the past, recording radio audio traffic required analog connections to be bridged on all radio system lines, and then connected to a large, expensive archival recorder. In the **VoIP** (Voice over Internet Protocol) world, things have changed. Once the recorder is connected and Multicast Addresses set up, audio traffic is recorded as configured by the user. There are no audio levels to set or wires to run.

Traditional recording systems record only the audio. In the **IP** (Internet Protocol) world, much more information is available within the audio stream. Each audio file also has an associated **SQL** (Structured Query Language) database record. The record contains fields and information specific to that audio. An audio file is located by using the different fields to enter parameters specific to the audio file(s) you want to find. Each field contains important information about the call as well.

Telex's Network Recorder contains three (3) separate applications, the recorder, a monitor, and a search engine, Telex Database Reviewer. This software is copy protected by a **USB** (Universal Serial Bus) dongle.

The Network Recorder monitors the network for audio packets of interest and stores them as raw **PCM** (Pulse-Code Modulation) audio. The PCM audio files are compressed into .mp3 format, which also creates a database record for each file. When the .mp3 file is written, a 32-bit digital signature is added to the file to guarantee its authenticity. Both **RX** (Receive) and **TX** (Transmit) audio are stored and separated for search and replay purposes. The positional recorder, recording direct from the console position, allows for recording select, unselect, and microphone audio from a specific console. The recorder also supports monitoring a line's audio at the recording station in real time.

The Telex Network Recorder Monitor is used to monitor Network Recorder activity. If the recorder goes offline, the monitor alerts the user. This software can be set up to send an e-mail alert if the recorder is not functioning.

Records in the database are easy to manage with the Database Reviewer software. Searchable parameters include **ANI** (Automatic Number Identification), line number, date, time, and call duration. Once files have been located they can be removed from the list or copied to a separate directory for playback on a different computer or .mp3 player. Call records and their associated audio can be archived for permanent storage. These call records can also be restored to the original location if needed. Archived calls can also be brought back into the database for review later.

While the recorder is designed to function as part of an overall Telex VoIP radio solution, it can be used for non-Telex systems. The IP-223 or IP-224 becomes an integral building block for this. The IP-223 or IP-224 is used to bridge to any circuit for recording. The IP-223's or IP-224's Multicast Addresses are then set to transmit the audio packet streams directly to the Network Recorder. Radio lines and telephone lines (with external DC blocking) can also be recorded in this manner.

Specifications

- One (1) Yeong Yang YY-R420 4U Rackmount ATX chassis with front USB, 3x5.25”(ext.), 2x3.5”(ext.) and 1x3.5”(int.) drive bays. Color: Black. Dimensions: 7”H x 19”W x 17.7”D (with rounded handles).
- One (1) Antec TruePower 550, 550 Watt Power Supply with Active PFC and Low Noise, Safety approvals: UL, CUL, CE, CB, FCC Class B, TUV, CCC, C-tick, BSMI.
- One (1) Intel Executive Series DQ67SW Micro-ATX Motherboard, Intel Q67 Chipset (2nd Generation i-Core technology, LGA-1155), FSB 1333/1066, 4xDDR3 Memory Slots (32GB Max), Integrated Audio, Video and Gigabit Ethernet. Kolar Part Number: MBDINTDQ67SW.
- One (1) Intel Core i7 Quad Core Processor, i7-2600 3.4GHz with 8MB Cache, LGA1155 CPU (95W).
- Two (2) 4GB DDR3-1066 installed (4GBx2 sticks=8GB, two slots remain open, Max capacity 32GB, non-ECC)
- One (1) Seagate Constellation 500GB SATA3 7200rpm 64MB Cache Enterprise Hard Drive (OS Drive).
- One (1) Samsung SATA DVD+/-RW (Black) with CDBurnerXP and Nero OEM.
- One (1) Removable Drive Bay Rack installed below Optical Disk Drive. Trayless, Keyless and Hotswappable drive bay for convenient storage/archiving needs.
- Two (2) Adaptec 1220SA SATA2 RAID 2-Port 1 x PCI-Express Controller for Raid Array.
- One (1) Raid Array: 2x Seagate Constellation 1 TB SATA3 7200rpm 32MB Cache Enterprise Hard Drives (Installed internally, DataRaid).
- One (1) Additional Drive: Seagate Constellation 1TB SATA3 7200rpm 32MB Cache Enterprise Hard Drive (Removable Archive Drive installed in Top Drive bay).
- One (1) Creative Labs SB Audigy 7.1 SB0610VP (Disable Onboard Sound).
- Microsoft Windows 7 Pro 64Bit OEM (Installed).
- Acronis TrueImage OEM Recovery Software.
- Includes FCC’B Declaration, RoHS and CE Declaration of Conformance, Kolar Component Continuity and Image Management Services and Telex Branding applied per Specifications.
- 3-Year Parts and Labor Depot Warranty.
- US English Keytronics Lifetime Classic II Keyboard USB (BLACK) with lifetime manufacturers warranty and Logitech LX3 Optical Mouse (Black/Charcoal) USB. ROHS compliant.

CHAPTER 2

Setup and Update

Hardware Setup

NOTE: For more information, see the Network Recorder and Database Reviewer Quick Start Guide, available for download at www.telexradiodispatch.com.

Once your Network Recorder has been unpacked network addresses, and connections must be set up before use.

CAUTION: As with all communication equipment, earth ground should be used. Earth ground is a low impedance path to the earth for the purpose of discharging lightening, static and radiated energy.

To **configure your network recorder installation**, do the following:

1. Obtain a **Static IP Address** from your IT department, this should include:

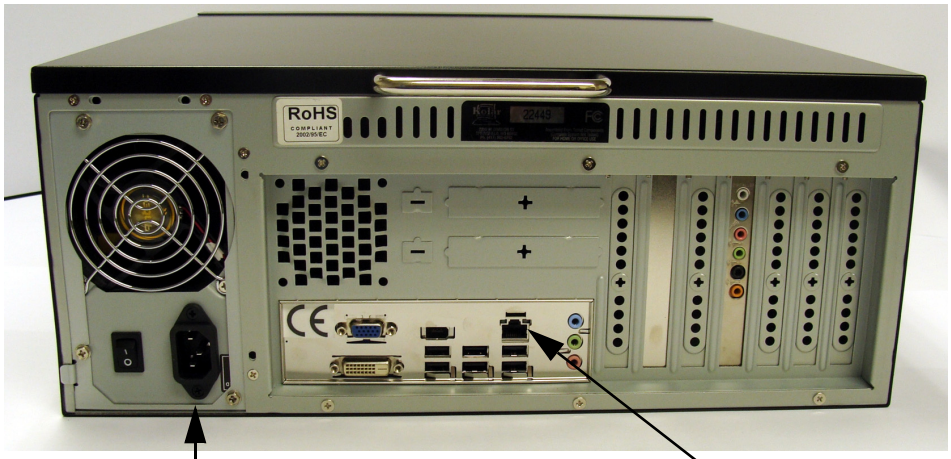
   - IP Address: _____
   - Network Mask: _____
   - Gateway Address: _____
   - DNS Server: _____

2. Determine the **location** for the computer.
3. Connect your **computer** by following the directions provided by the computer manufacturer. *Minimum connections include the monitor, keyboard, and mouse.*
4. Connect the **monitor speakers** to the external sound card.

   NOTE: The internal sound card is disabled and the front computer headphone and mic jack are disabled.

To **set up the network recorder**, do the following:

1. Attach the **supplied power cord** to the power connector on the back of the Network Recorder.
2. Plug the **Network Recorder** into an electrical outlet.
3. Attach the **Ethernet cable** to the network connector on the back of the Network Recorder.



Initial Power Up

The **Initial Power Up** of the Network Recorder is completed at the factory prior to the burn-in period. A temporary IP Address is set for the burn-in period and must be changed to the IP values determined in the previous section.

REFERENCE: For more information, see the Network Recorder Remote Database Reviewer Quick Start Guide, available for download at www.telexradiodispatch.com.

IP Address Setup

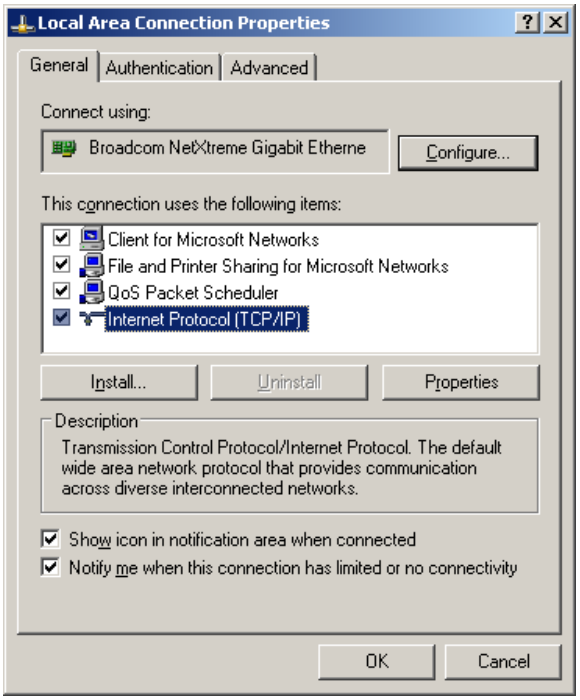
The **IP Address** for the Network Recorder must be static. Positional recording, for example, requires the consoles to be able to send audio data to a specific IP address.

IMPORTANT: All the instructions in this manual are written towards the Windows XP operating system and may differ slightly for any other operating system.

To **set the IP address**, do the following:

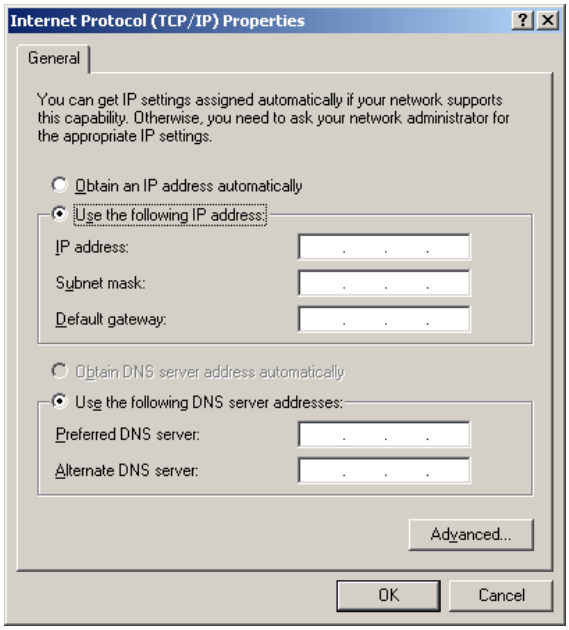
1. From the Start menu, select **Settings**.
   The Settings flyout menu appears.
2. Select **Network Connections**.
   The Network Connections menu appears.
3. Select **Local Area Connections**.
   The Local Area Connection window appears.

4. Click **Properties**.
The Local Area Connection Properties window appears.



5. Select **Internet Protocol (TCP/IP)**.
Internet Protocol TCP/IP is highlighted.
6. Click **Properties**.
The Internet Protocol (TCP/IP) Properties window appears.
7. Set the **network parameters**.

NOTE: Contact your network administrator for network configuration details.



8. Click **OK**.
The IP Address has been configured.
9. Enter the **Administrator Password**.

Network Recorder Connection to MySQL

Once a password is set for the MySQL root account, and Network Recorder is started, the connection fails because the Network Recorder does not know the password.

To **configure the database settings using the root password and test the connection to the Network Recorder**, do the following:

1. Double-click the **Network Recorder icon** on your desktop.
   The following message appears: Failed to connect to database: Invalid Password. Would you like to configure Database Settings?
2. Click **Yes** to configure database settings.
   The Database Connections Options window appears.
3. In the Password field, enter the **root password**.
4. Click **Test**.
   A success or failure message appears.
5. If the connection is successful, click **OK**.
   Network Recorder appears.
   OR
   If the connection fails, click **OK**.
   A message with troubleshooting information appears.

Software Update

Updated software is available from the Telex website at www.telexradiodispatch.com.

Use these instructions to reinstall Network Recorder software on versions earlier than NR-V2. For more information, see Network Recorder version NR-V2, see “Restore Network Recorder Software” on page 19.

Uninstall

Begin the update process by uninstalling the previous version of Network Recorder.

To **uninstall the software**, do the following:

1. From the Start menu, select **Settings**.
   The Settings flyout menu appears.
2. Select **Control Panel**.
   The Control Panel window appears.
3. Click **Add or Remove Programs**.
   The Add or Remove programs window appears.
4. Select **Telex Network Recorder**.
5. Click **Remove**.
   A message: Are you sure you want to remove Telex Network Recorder from your computer? appears.
6. Click **Yes** to uninstall the program.
   The software is removed.

Install New Version Software

To **download and install a new version of Network Recorder**, do the following:

1. Locate the **Telex Network Recorder.msi**.file on the Telex website.
2. Click the **link**.
   The File Download window appears.
3. Click **Save**.
   The Save As window appears.
4. Specify a **path** for the new file.
5. Click **Save**.
   The software is saved in the selected folder.
6. Double-click **Telex Network Recorder.msi**.
   The Telex Network Recorder Install Shield Wizard window appears.
7. Click **Next**.
   The Ready to Install the Program window appears.
8. Click **Install**.
   The Installing Telex Network Recorder window appears. The installation is indicated by a green process line at the bottom of the window. Once installed, the Install Shield Wizard Complete window appears.
9. Click **Finish**.
   The Network Recorder is installed. A shortcut to the program is on the desktop.

Restore Network Recorder Software

If the Network Recorder version NR-V2 software installation becomes unstable you can restore it with Acronis True Image. Acronis True Image software is loaded on the NR-V2 at the factory and a shortcut to it is provided on the desktop. See Figure 1.

FIGURE 1. Acronis Shortcut Icon

To **restore the Network Recorder software on an NR-V2**, do the following:

1. From the desktop, double-click the **Acronis True Image OEM** icon.
   The Acronis True Image OEM Edition message window appears.
2. Click **No, Thanks**.
   The Acronis True Image OEM Edition window appears.
3. Click **Restore Image**.
   The Restore Image Wizard appears.
4. Click **Next**.
5. Follow the **prompts** to restore the image.

NOTE: If Acronis True Image OEM Edition is not available on your NR-V2 desktop, see “Software Update” on page 18, for manual installation instructions.

CHAPTER 3

Communications System Design

Designing a **RoIP** (Radio over Internet Protocol) system requires an understanding of the radio network and how the various radios and other communication equipment are connected.

The first step in designing a C-Soft dispatch window is to create a road map of the radio, console, and any other communication equipment locations. This road map must include the following:

- Multicast Addresses for each channel of **TX** (transmit) and **RX** (receive) communication.
- Port numbers for each channel of TX and RX communication.
- Base IP Addresses assigned to each console or radio on the network and the number of frequencies each radio operates on.
- The number of lines each console operates on.

Network Requirements

Bandwidth

Each **VoIP** (Voice over Internet Protocol) channel requires 50kBit of bandwidth while active. **Full-duplex** (audio in each direction) conversation requires 100kBit of bandwidth.

Some radio systems transmit go-ahead beeps when it is clear to talk. In order for the console operator to hear the beeps, the system must support full-duplex communication. Full-duplex bandwidth may only be required for the first few seconds of a conversation, due to the brief nature of the go-ahead beeps at the beginning of the transmission.

When using Radio Dispatch's IP-223 or an IP-224 with a **TDI** (Telephone Dispatch Interface) adapter, C-6200, or a NI-223+ for a telephone connection, a full 100kBit is required since it is a full-time, full-duplex conversation.

Multicast

In general, Radio Dispatch systems require Multicast to function. The network must be able to create a static Multicast Address accessible at all times.

NOTE: When using Cisco technology, IP PIM dense mode is generally recommended. Generally speaking, sparse-dense-mode can also be implemented effectively. We recommend explicitly joining the multicast group with an IP IGMP static-join X.X.X.X. command. For more information on Cisco and IGMP, visit www.cisco.com.

IGMP

IGMP (Internet Group Management Protocol) can be used to control where multicast is allowed to propagate. This should be limited to subnets that utilize the C-Soft program as the dispatch console and only when used on an intermittent basis (when the C-Soft program is used for a period of time and then shut down.

Once an IGMP join message is sent out, networks typically enables multicast and then prune branches after a period of time. Due to intermittent usage patterns of 2-way radios, such a system can appear to work flawlessly for a period of time and then no longer work.

When a console on the subnet is expected to be continually operational, multicast must be active for that subnet at all times.

Network Performance

Networks should perform well under any loading conditions. The default audio delay is 200ms, plus any delay added by the network. While delay alone does not cause issues, variable delay (*also known as jitter*) does. Jitter in a network cannot exceed the maximum packet buffer of any individual product buffer. For example, the IP-223 or IP-224, handles approximately 600ms of network jitter. For more information, see the individual product manuals for these specifications.

NOTE: Losing more than 5% of the total packets transmitted compromises audio quality and system performance. Optimally, packet loss should be less than 1%.

Tone Remote Control

Radio Dispatch sells a full line of tone control consoles and radio adaptors. This technology requires an analog connection between each console and each radio. Each console that needs to control an individual radio is wired in parallel to allow multiple operator positions to monitor and control the same radio. For a large system with multiple console positions and multiple radio channels, an entire rack might be devoted to bridging audio to all interested parties. In addition, due to loading of multiple consoles on a particular circuit, additional bridging hardware might be required, increasing wiring and tuning of the system for acceptable performance. The Ethernet-based IP network solves many of these issues and provides for a number of other services not possible before.

VoIP Radio Control

RoIP being a subset of VoIP is referred to as VoIP generically throughout this document. VoIP is a method of breaking analog audio into packets and transferred over a computer data network. Because of the packet size nature of Ethernet, the audio is generally broken into *10–40ms* chunks of audio, compressed, and placed on the Ethernet. The nodes of the network are then free to utilize or ignore any combination of packets. If a particular audio stream is of interest, the stream of audio packets are captured, encompassed, converted back to analog, and played on available speakers.

Given the popularity of the Ethernet-based network, many companies and agencies already have an existing network or **LAN** (Local Area Network). Beyond that, a large number of companies exist to provide **WAN** (Wide Area Network) connections between sites with significant distances between them. The WAN connections can be used to connect offices across the street from one another, around the world, or anywhere in between. Possibly the best thing about these connections is they may already exist. In many cases, WAN links are less expensive than a comparable leased analog line and they can carry more conversations simultaneously.

The most compelling reason to consider basing the next radio control system upgrade on VoIP technology is the simplification in wiring requirements. Instead of needing to bring a pair or more of wires, per channel, to each console, only a single connection to the Ethernet is required. Since Ethernet can easily handle dozens of simultaneous connections, it becomes the only pipeline required for all communications.

IP Operation Overview

The network options today have essentially converged on Ethernet. A local electronics store may sell many of the components for both a wired or wireless network solution. For more advanced network applications, an in-house or external network hardware source may be required. These sources of information can also help with the design of the network, as well as provide sources for advanced networking equipment, such as routers and hubs from Cisco and other network vendors. This section is an overview of the protocol that operates on the top of the Ethernet network.

Ethernet as Physical Layer

Ethernet is a network and has a low level method for transferring data from one location to another. Source and destinations are based on the MAC Address which is embedded in the Ethernet interface. The MAC Address is unique for all devices in the world and cannot be changed. The **IEEE** (Institute of Electrical and Electronics Engineers) controls the allocation of the MAC Addresses. The definition for Ethernet includes requirements for interoperation at speeds of *10 and 100 Mbps*. Higher speeds are available, but generally have not filtered down into end-user equipment.

Bandwidth

Each VoIP channel requires *50kBit* of bandwidth while active. Full-duplex conversation requires *100kBit* of bandwidth.

Some radio systems transmit go-ahead beeps when it is clear to talk. In order for the console operator to hear the beeps, the system must support full-duplex communication. Full-duplex bandwidth may only be required for the first few seconds of a conversation, due to the brief nature of the go-ahead beeps at the beginning of the transmission.

When using Radio Dispatch's IP-223 or IP-224 with a **TDI** (Telephone Dispatch Interface) adapter, C-6200, or a NI-223+ for a telephone connection, a full *100kBit* is required since it is a full-time, full-duplex conversation.

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In general, Radio Dispatch systems require multicast to function. The network must be able to create a static multicast address, accessible at all times.

Once an IGMP join message is sent out, networks typically enable multicast and then prune branches after a period of time. Due to intermittent usage patterns of 2-way radios, such a system can appear to work flawlessly for a period of time and then no longer work.

NOTE: When using Cisco technology, IP PIM dense mode is recommended. Generally speaking, sparse-dense-mode can also be implemented effectively. We recommend explicitly joining the multicast group with an IP IGMP static-join X.X.X.X command. For more information on Cisco and IGMP, visit www.cisco.com

TCP/IP and UDP/IP

TCP/IP (Transmission Control Protocol/Internet Protocol) is the best-known protocol for use in computer communications. It is the basis for communications on the Internet and World Wide Web. It is a guaranteed method of transferring data between two computers. Being guaranteed means for every packet of information transferred from one (1)computer to another an acknowledgement packet is returned. Additional *handshaking* is utilized from the outset of the data communications to guarantee both ends of the connection. Because of this guaranteed communications and its implementation utilizing handshaking (no other method is available), TCP/IP adds a great deal of overhead to data communications not desirable for audio traffic over a network. This is where UDP/IP finds its acceptance.

UDP/IP (Universal Datagram Protocol/Internet Protocol) has existed as long as TCP/IP as an unreliable method of data communications. The term unreliable should not be thought of as a problem for audio communications over a network connection. UDP allows for a computer to send a packet of data to another computer without the handshaking sequence required within TCP/IP. Because of this, the computer sending the packet has no confirmation the packet arrived at its destination. While the loss of packets can be a problem, it generally is accounted for when the UDP application is developed. In the case of VoIP, the loss of a packet, which only contains 10-40ms of audio, is not a problem, as the human ear generally ignores the small chunk of lost audio. In addition, programmers play tricks to make this loss of information difficult to detect to the human ear. The largest single factor in the loss of UDP/IP packets is network design and loading. As long as a network is well designed with capacity for all of its chartered requirements, packet loss can be a non-issue. Because of its lower overhead and its ability to Multicast, UDP/IP is the protocol of choice for VoIP development.

Multicast UDP/IP

Multicast is an extension to UDP/IP. It enables one (1) computer to broadcast data packets to multiple recipients. This is an ideal model for radio communications when multiple people need to monitor the audio. A single VoIP connected radio is setup to broadcast multicast VoIP packets when receiving audio. Since the multicast packets can be received by any interested party, all consoles monitoring the audio can receive and decode the packets for playback. In addition to simplifying monitoring of audio traffic by multiple listeners, multicast also greatly cuts the bandwidth requirement on the network. Instead of having to regenerate the received audio into a UDP/IP data stream to each individual monitor, which uses the bandwidth times the number of monitoring consoles, a single data stream is generated and monitored by all.

Implementation of a Multicast protocol requires a few things for seamless use on a network. First, clients must all support the protocol. This is accepted as a given since all Telex products utilize multicast for audio communications. Second, consider if the network infrastructure supports multicast.

Multicast packets are defined to be all packets with a destination address of between 224.0.0.0 and 239.255.255.255. Some are commonly used for broadcast audio and are not necessarily available. When a computer opens a UDP/IP port within this address range, it also joins the group. By joining the group, a packet is sent out to all addresses saying it is interested in seeing the traffic on this multicast address. Routers that receive this broadcast message to join a particular multicast address then pass packets through because the router is now aware a listener is interested in this traffic. The routers utilized in the network must support Multicast Addressing. The protocol used to alert routers to parties who are interested in certain multicast address traffic is IGMP. The Radio Dispatch products support IGMPv1 as defined in RFC 1112.

In addition to the joining of multicast broadcast groups, clients on the network can also specify a packet **TTL** (Time-To-Live). The TTL is the number of routers the packet goes through before being stopped. As an example, the TTL for a particular broadcasting node on the network is set to three (3). This means when a packet is transmitted, it arrives at the first router in the network. This router examines the TTL value in the packet and determine if it should pass it through since it is not zero (0). When it passes the packet, the router decrements the TTL value by one (1) to a value of two (2). The next router encountered by packets does the same, reducing the value of TTL to one (1). The next router does the same and the TTL is reduced to zero (0). The next router the packet reaches examines the TTL value, see it is zero (0), and the packets is not be re-transmitted. Setting a large TTL value may allow for packets to get from one (1) host to another on a large network, but also adds additional bandwidth requirements due to the larger number of packets being transferred.

Radio Dispatch Port-Centric Method

As mentioned earlier, Radio Dispatch utilizes Multicast for all audio communications. Typically only one (1) Multicast Address is used for all traffic. In addition to a valid Multicast Address, a port number is required. The port is an additional two (2) bytes of information ranging between 1054 and 65535 that further specifies how the data traffic should be handled. For example, assume the base Multicast Address chosen is 225.8.11.81. Port 1054 is used to distinguish channel 1's RX traffic. Port 1072 is used to specify channel 1's TX traffic. Channel 2 might use 1055 for RX and 1073 for TX traffic. By making each channel's TX and RX ports different and unique, full-duplex[1] audio can be supported and many channels of traffic can be supported using only one (1) Multicast Address. It is through this method a single console can pick and choose the particular radio resources available on the network without concern for what the console right next to it is utilizing.

1. *Full-duplex data transmission means data can be transmitted in both directions on a signal carrier at the same time.*

CHAPTER 4

Network Recorder Operation

Network Recorder Window

The **Network Recorder** window, shown in Figure 2, is used to configure and view each line's Network Recorder activity and monitor audio as it is recorded.

This page can contain *up to 100 lines*.
Up to 20 lines can be viewed at a time.

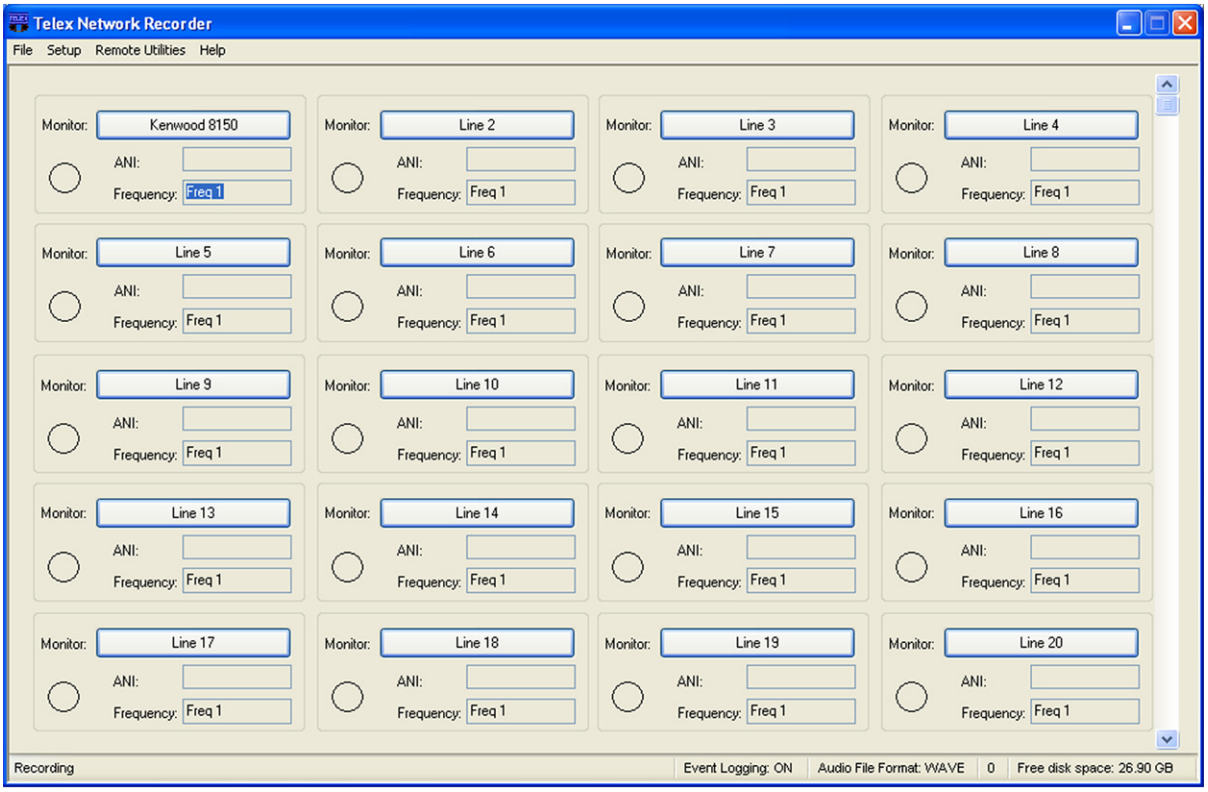


FIGURE 2. Network Recorder Window

File Menu

The **File** menu contains the following options: *Save Setup* and *Exit*.

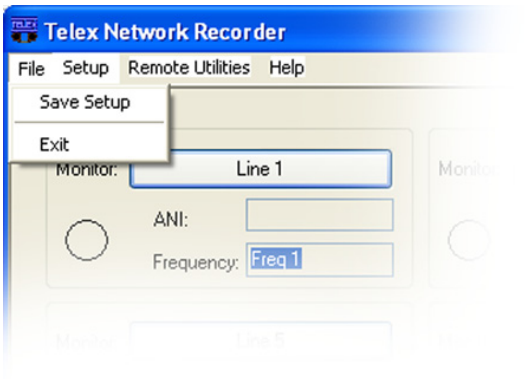


FIGURE 3. Network Recorder File Menu

Save Setup Warning Window

The **Save Setup Warning** window, shown in Figure 4, indicates the changes have been saved. Network Recorder must be restarted for the changes to take affect.

NAVIGATION: Select **Edit|Save Setup** from the menu bar.

NOTE:

- The file used to store the Network Recorder configuration is: *C:\Program Files\Telex Communications\Telex Network Recorder\Data Files\recordIP.telex*.
- Changes made in this window do not affect the currently running Network Recorder. When all changes are made, they are automatically saved.

FIGURE 4. Save Setup Warning Window

Shutdown? Window

The **Shutdown?** window, shown in Figure 5, is used to close the application.

NAVIGATION: Select **File|Exit** from the menu bar.

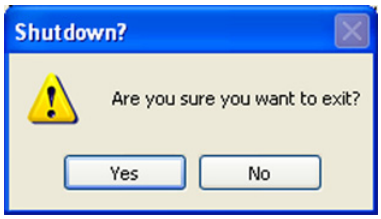


FIGURE 5. Shutdown? Window

Setup Menu

The **Setup** menu contains the following options: *IP Setup, Database Setup, User ID List, NEO Setup, Events Setup, Storage Locations, Recorder Duration Options, Audio File Format, P25 Setup* and *Crypto Keys*.

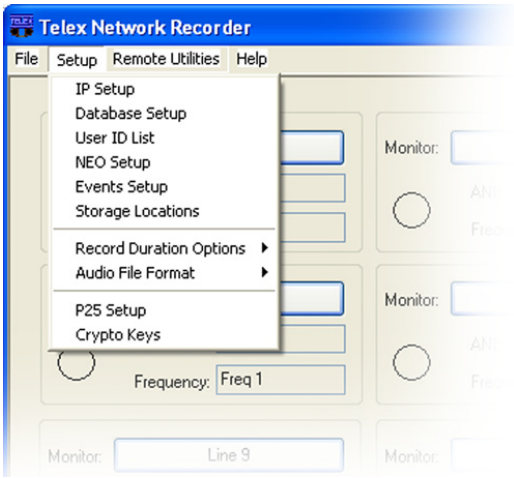


FIGURE 6. Network Recorder Setup Menu

IP Setup Window

The **IP Setup** window, shown in Figure 7, is used to configure each line type and set up the Network Recorder IP parameters.

This window can contain up to *100 lines* depending on configuration.

NAVIGATION: Select **Setup|IP Setup** from the menu bar.

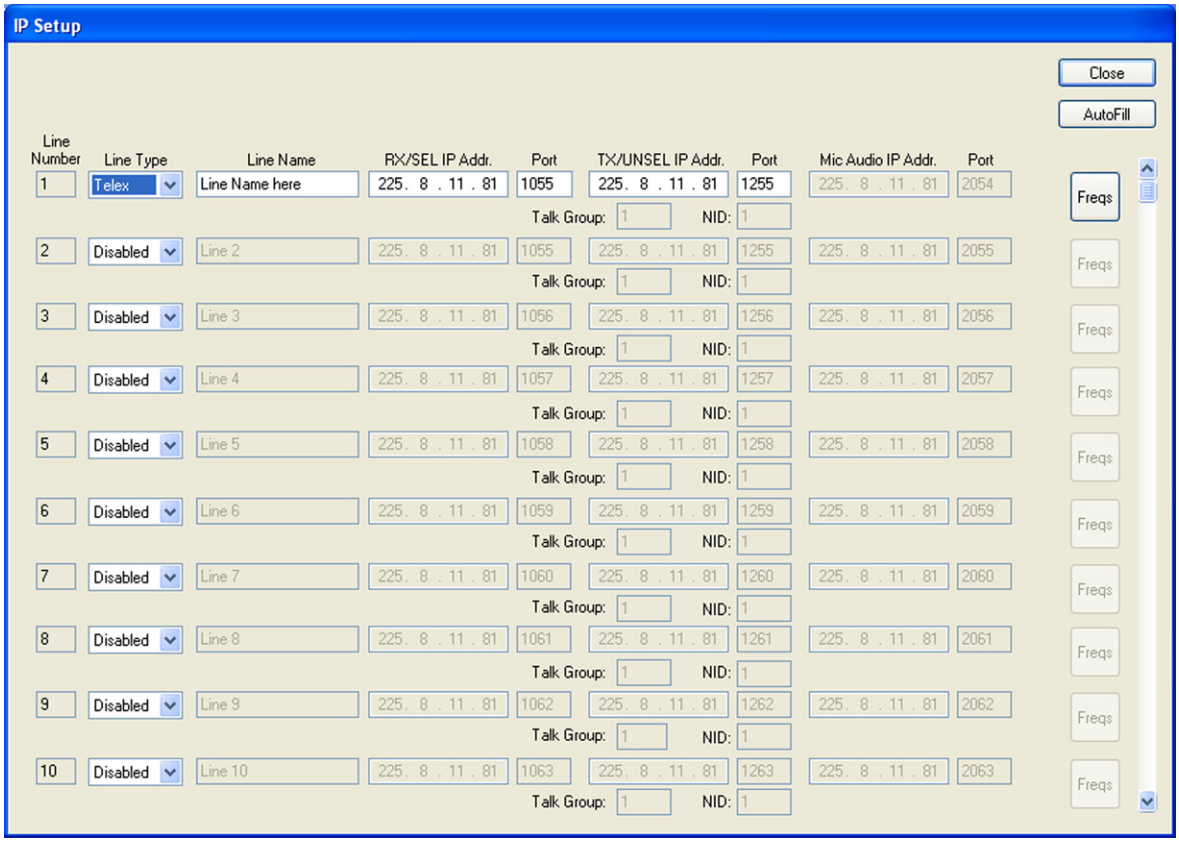


FIGURE 7. IP Setup Window

Line Number

The **Line Number** displays the number of the line in the system.

This field cannot be modified.

Line Type Drop Down Menu

The **Line Type** drop down menu, shown in Figure 8, is used to select a line type.

NOTE: Typically, lines configured for Radio Dispatch use the same Multicast Address for the RX/SEL, TX/UNSEL and Mic Audio IP Addr fields.

Available selections are:

Disabled - The line is not used.

Telex - The line is used to record audio from Telex VoIP hard console products.

P25 - The line is used to record audio from an EF Johnson 2600 Series repeater.

Position - The line is used to record positional audio from a single console position. When a line is set to Position, the Mic Audio IP addr field is enabled.

REFERENCE: For more information, see the C-Soft Technical Manual (P/N F.01U.218.561).

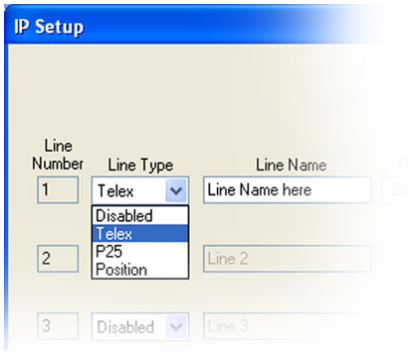


FIGURE 8. Line Type Drop Down Menu

Line Name Field

The **Line Name** field is used to enter a descriptive name for the line. This name is used for identification purposes when recordings are saved to the database.

This field can contain *up to 30 alphanumeric characters*.

RX/SEL IP Addr. Field

The **RX/SEL IP Addr**. field indicates the IP Address to receive audio on a selected line.

To **set the RX/SEL audio IP Address on lines configured for Telex or P25**, do the following:

> Enter the **IP-223's or IP-224's IP Address**.
> OR
> Enter the **Console IP Address**.
> OR
> Enter the **base station IP Address**.
>
> **NOTE:** Lines configured for Telex use the same multicast address for the RX/SEL, TX/UNSEL, and Mic Audio IP Addr fields

To **Set RX/SEL audio IP Address on a line configured for position,** do the following:

> Enter the same console **Select Speaker/Output IP Address** as configured in C-Soft Designer.

Port (RX) Field

The **Port (RX)** field indicates the port number to use for monitoring receive audio. The value must be unique per line.

The range for this field is *1024* to *65535*.

NOTE: The port number must match the RX port number of the IP-223 or IP-224, base station, or console.

TX/UNSEL IP Addr. Field

The **TX/UNSEL IP Addr**. field indicates the IP Address that receives transmit audio from a console.

To **set the TX/SEL audio IP Address on lines configured for Telex or P25**, do the following:

> Enter the **IP-223's or IP-224's IP Address**.
> OR
> Enter the **Console IP Address**.
> OR
> Enter the **base station IP Address**.
>
> **NOTE:** Lines configured for Telex use the same Multicast Address for the RX/SEL, TX/UNSEL, and Mic Audio IP Addr fields

To **Set TX/SEL audio IP Address on a line configured for position,** do the following:

> Enter the same console **Select Speaker/Output IP Address** as configured in C-Soft Designer.

Port (TX) Field

The **Port (TX)** field indicates the port number to use for monitoring transmit audio.

The range for this field is *1024* to *65535*.

NOTE: The port number must match the TX port number of the console.

Mic Audio IP Addr Field

The **Mic Audio IP Addr** field indicates the IP Address used to monitor the console's mic audio.

To **set the Mic Audio IP Addr field**, do the following:

1. Enter the same **Mic Output IP Address** as configured in C-Soft Designer.
2. Enter the same **port number** as configured in C-Soft Designer.

NOTE:

- This field is disabled when line type is set to Telex.
- Set this field to the value of the console's Mic Output IP Address

Port Field

The **Port** field indicates the port number used to receive/transmit audio from a console's microphone.

Talk Group Field (P25 only)

The **Talk Group** field indicates the talk group value for a given line.

NID Field (P25 Only)

The **NID** (Network Interface Device) indicates the **NAC** (Network Access Control) value to send when traffic is generated on this line. Also, receive audio is routed to a unique line based on the NAC value received from the repeater.

Close Button

The **Close** button is used to accept the changes and close the window.

Autofill Button

The **Autofill** button is used to open the Autofill window. See "Autofill Window" on page 31;

Autofill Window

The **Autofill** window is used to eliminate repetitious data entry by automatically populating the corresponding fields on the IP Setup window with the entries shown in the AutoFill Line Properties window. The RX and TX entry automatically increments by one (1) for each filled line.

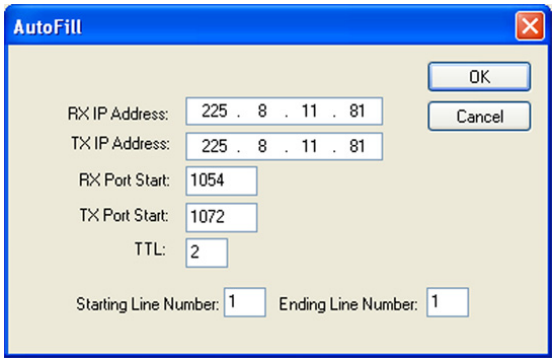


FIGURE 9. AutoFill Line Properties Window

OK Button

The **OK** button is used to apply the specified AutoFill parameters to the IP Setup window.

To **fill line parameters with the AutoFill feature**, do the following:

1. Select **File|IP Setup** from the menu bar.
   The IP Setup window appears.
2. Click **Autofill**.
   The AutoFill Line Parameters window appears.
3. Enter an **RX IP Address**.
4. Enter a **TX IP Address**.
5. Enter an **RX Port start numbe**r.
6. Enter a **TX Port Start number**.
7. Enter a **TTL**.
8. Enter a **starting line** number.
9. Enter an **ending line** number.
10. Click **OK**.
    The IP Addresses, port numbers and TTL are automatically filled in the appropriate fields starting and ending with line numbers entered in the AutoFill Line Parameters window.

Cancel Button

The **Cancel** button is used to close the window.

Freqs Button

The **Freqs** button is used to open the “Per Line Frequency Setup Window” on page 33.

Per Line Frequency Setup Window

The **Per Line Frequency Setup** window, shown in Figure 10, is used to enter the parameters for the individual function tones available for the line.

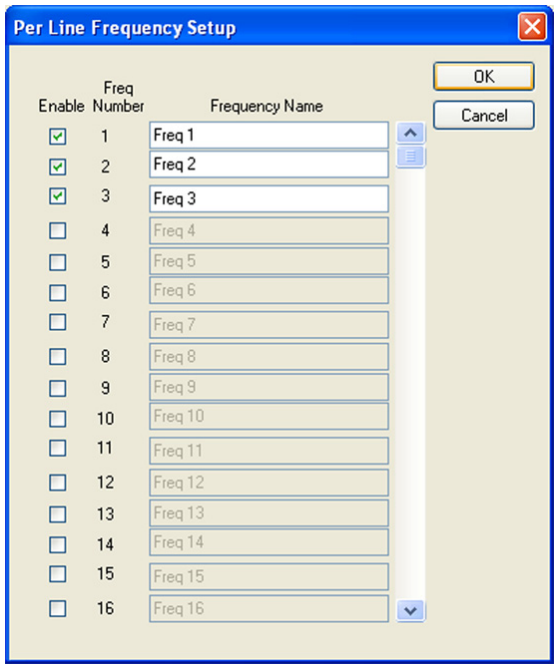


FIGURE 10. Per Line Frequency Setup Window

Enable Check Box

The **Enable** check box indicates the corresponding frequency number is activated.

Freq Number Display

The **Freq Number** display indicates the frequency number assigned to the frequency name.

Frequency Name Field

The **Frequency Name** field is used to enter a descriptive name for the frequency. This name appears in the Frequency field on the Network Recorder's main window.

This field can contain *up to 12 alphanumeric characters*.

To **set up a frequency,** do the following:

1. From the menu bar, select **Setup|IP Setup**.
   The IP Setup window appears.
2. Click **Freqs** for the line you want to configure.
   The Per Line Frequency Setup window appears.
3. Select the **Enable** check box for the frequency number.
   The Frequency Name field becomes active.
4. Enter a **name** for the frequency.
5. Click **OK**.
   The Per Line Frequency Setup window closes.

OK Button

The **OK** button is used to accept changes and close the window.

Cancel Button

The **Cancel** button is used to discard the changes and close the window.

Database Connection Options Window

The **Database Connections Options** window, shown in Figure 11, is used to configure Network Recorder's connection to the MySQL database root account. Changes made to this window affect how Network Recorder connects to the MySQL database and does not affect the MySQL database root account.

NOTE: On startup, Network Recorder attempts to connect to the local MySQL service. Initially, the MySQL root account password is blank. To learn how to set the MySQL root account password, see "Network Recorder Connection to MySQL" on page 18.

NAVIGATION: Select **Setup|Database Setup** from the menu bar.

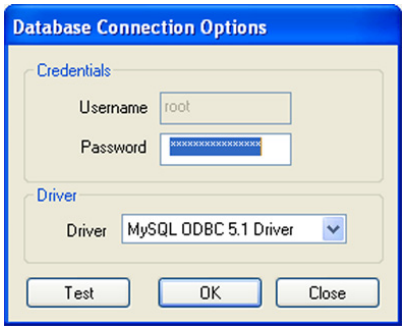


FIGURE 11. Database Connection Options Window

Credentials Group Box

Username Field

The **Username** field displays *root*, which is the account Network Recorder uses to connect to the MySQL server. Network Recorder requires access to the database through the root account.

This field cannot be modified.
The default is *root*.

Password Field

The **Password** field is used to enter a password for logging into the MySQL database root account. For more information, see “Network Recorder Connection to MySQL” on page 18.

The field can contain *up to 16 characters* or be left blank.

Driver Group Box

Driver Drop Down Menu

The **Driver** drop down menu is used to specify the MySQL **ODBC** (Open Database Connectivity) driver.

This value is automatically populated when Network Recorder is started.

Test Button

The **Test** button is used to test the connection to the MySQL database. Once clicked, a success or failure message appears.

OK Button

The **OK** button is used to accept the password and driver entered in the fields and close the window.

Close Button

The **Close** button is used to discard the changes and close the window.

User ID Window

The **User ID** window, shown in Figure 12, is used to create a list of individual users in the system for recall later. It is used in conjunction with the ANI features of certain radios. Once the window is closed and reopened, the user IDs are sorted from the largest to the smallest value.

This list can contain *up to 10,000 User IDs*.

NAVIGATION: Select **Setup|View User Ids** window.

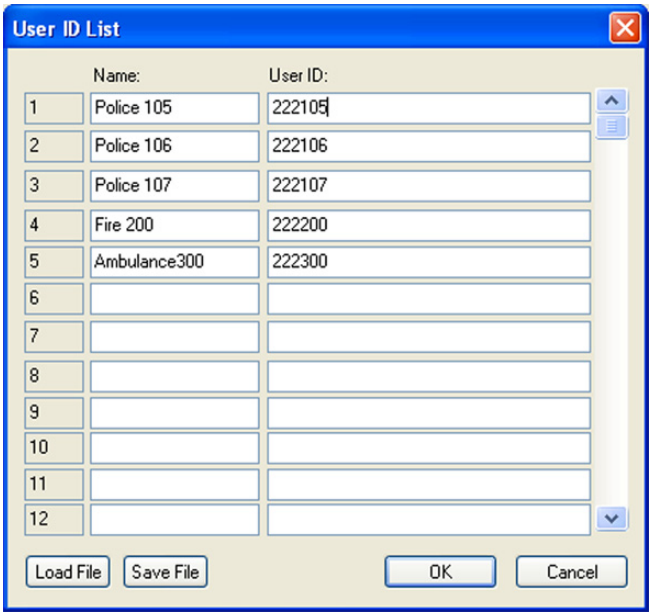


FIGURE 12. User ID List Window

Name Field

The **Name** field is used to enter a descriptive name to associate with the User ID.

This field can contain *up to 16 characters.*

User ID Field

The **User ID** field is used to configure the user ID or status ID number transmitted by the radio.

This field can contain *up to 32 alphanumeric characters*.

NOTE: Some radio ANI systems function with hexadecimal[1] numbers. A hexadecimal value can be entered for the User ID by entering *0x* in front of the number.

1. *A numeral system that uses a base of 16. Sixteen distinct symbols, most often 0-9, and A, B, C, D, E, F, to represent values 10 to 15.*

Load File Button

The **Load File** button is used to import or export a .csv file. This allows a central list to be maintained in a spreadsheet or other file format and then imported into the console design. The file must be formatted with the name in first column followed by the ID in the second column, with no more than one (1) name and ID per row.

NOTE: Once the .csv file is imported, all items in the current list are overwritten.

To **import a .csv file**, do the following:

1. Click **Load File**.
   The Open window appears.
2. Locate and highlight the **file** you want to import.
3. Click **Open**.
   The file is imported. The User Name and ID field are populated.

Save File Button

The **Save File** button is used to save the current User ID List to a .csv file.

To **save the current User ID List to a .csv file**, do the following:

1. Click **Save File**.
   The Save As window appears.
2. In the Filename field, enter a **name**.
3. Click **Save**.
   The .csv file is saved in the specified folder.

OK Button

The **OK** button is used to accept the changes and close the window.

Cancel Button

The **Cancel** button is used to discard the changes and close the window.

NEO Setup Window

The **NEO Setup** window, shown in Figure 13, is used to configure a NEO-10 connection. The Network Recorder monitors NEO-10 traffic on all associated devices except the console that initiated the relay change. This allows for a permanent record of network based input and output changes.

REFERENCE: For more information, see the NEO-10 Technical Manual (P/N F01U188064).

NAVIGATION: Select **Setup|NEO Setup** from the menu bar.

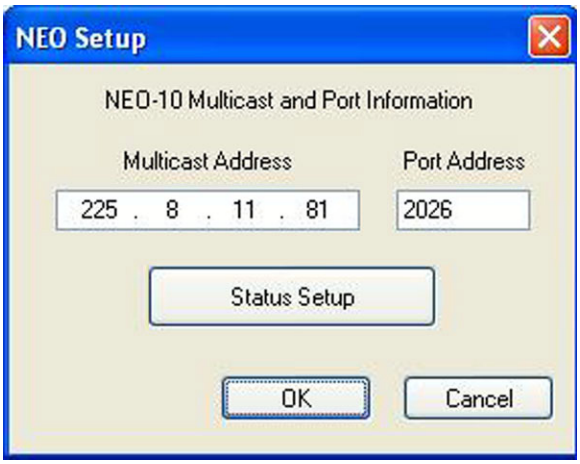


FIGURE 13. NEO IP Information Setup Window

Multicast Address Field

The **Multicast Address** field is used to enter the NEO-10's Multicast Address.

Port Address Field

The **Port Address** field is used to enter the NEO-10's Port Address.

Status Setup Button

The **Status Setup** button is used to open the NEO-10's Status Setup window.

FIGURE 14. Status Setup Window

NEO-10 Device Drop Down Menu

The **NEO-10** drop down menu contains an index that references the NEO-10 Device. One (1) of 25 devices can be selected.

IP Address Field

The **IP Address** field is used to enter the IP address of the NEO 10. There can only be one (1) unique IP address per index.

Port Drop Down Menu

The **Port** drop down menu is used to select the port to be used for the NEO-10 alias. Ports 1 through 10 may be selected.

Input/Relay Drop Down Menu

The **Input/Relay** drop down menu is used to select the type of NEO-10 Port/Device Alias being defined. This menu consists of two (2) items; Relay or Input. This selection displays the alias assigned in the NEO-10 Port/Device Alias edit box for the given port.

NEO-10 Port/Device Alias

The **NEO-10 Port/Device Alias** field is used to enter a description of the main alias of the Port/Relay or Port/Input combination.

This field can contain *up to 32 characters*.

State Drop Down Menu

The **State** drop down menu is used to select the state the alias is assigned in the Active/Inactive Alias State field.

Available options for this field are *on* and *off*.

Active/Inactive Alias State Field

The **Active/Inactive Alias State** field is used to enter a description of the on/off state of the Port Relay or Port/Input combination.

This field can contain *up to 32 characters*.

Save To File Button

The **Save To File** button saves all alias information to a .csv file format.

Load File Button

The Load File button allows the user to load a .csv file which contains relay alias.

NOTE: A user can load a relay alias .csv file created in C-soft Designer.

OK Button

The **OK** button is used to accept changes and close the window.

Cancel Button

The **Cancel** button is used to discard changes and close the window.

Events Setup Window

The **Events Setup** window, shown in Figure 15, is used to activate event logging and configure the type of event(s) to log.

Available selections for this field are: *Crosspatch, Emergency, Frequency iDen, Intercom, Monitor, Neo, Scan* and *Supervisor.*

NOTE: When event logging is activated, all events are recorded and stored in the database.

NAVIGATION: Select **Setup|Event Setup** from the menu bar.

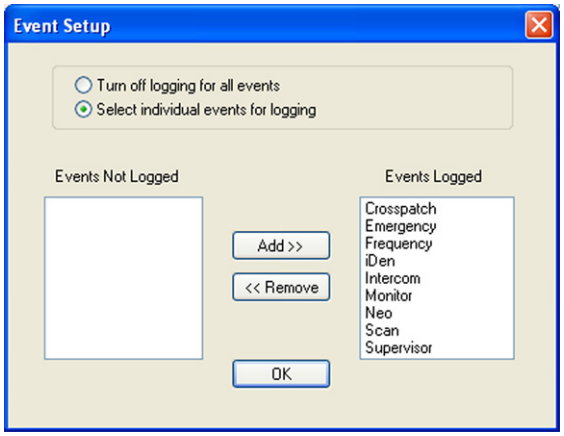


FIGURE 15. Event Setup Window

Turn off logging for all events Radio Button

The **Turn off logging for all events** radio button indicates no events are logged.

Select individual events for logging Radio Button

The **Select individual events for logging** radio button indicates the events in the Events Logged field are logged.

Events Not Logged Field

The **Events Not Logged** field indicates these events are not logged.

Events Logged Field

The **Events Logged** field indicates these events are logged.

Add >> Button

The **Add >>** button is used to move events from the Events Not Logged field to the Events Logged field.

To **add an event to be logged**, do the following:

1. In the Events Not Logged field, select an **event**.
2. Click **Add>>**.
   The event moves to the Events Logged field.

Remove >> Button

The **Remove >>** button is used to move events from the Events Logged field to the Events Not Logged field.

To **remove an event(s)**, do the following:

1. In the Events Logged field, select **one or more event(s)**.
2. Click **Remove >>**.
   The event moves to the Events Not Logged field.

OK Button

The **OK** button is used to accept changes and close the window.

Audio and Database Storage Locations Window

The **Audio and Database Storage Locations** window, shown in Figure 16, is used to set the path for the audio and database files. Typically this is configured when the Network Recorder is installed.

The following file locations display at the top of the window:

Audio Files Stored at Display Field

The **Audio Files Stored** at display field indicates the path to the audio file storage location.

Database Files Stored at Display Field

The **Database Files Stored** at display field indicates the path to the database server data.

NOTE: Audio and database files should be stored on the same RAID protected drive.

NAVIGATION: Select **Setup|Storage Locations** from the menu bar.

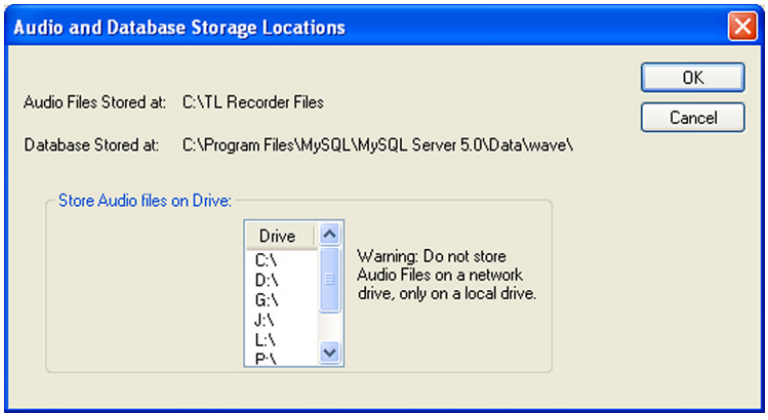


FIGURE 16. Audio and Database Storage Locations Window

Store Audio Files on Drive Group Box

Drive Drop Down Menu

The **Drive** drop down menu is used to select the drive path for the audio files. This is accomplished during installation, see “Network Recorder Connection to MySQL” on page 18.

OK Button

The **OK** button is used to accept the password and drive location entered in the fields and close the window.

Cancel Button

The **Cancel** button is used to discard the changes and close the window.

Record Duration Option

The **Record Duration** option is used to configure the call duration to ignore and not record. Selecting the appropriate setting for your system helps reduce the number of glitch audio files stored to the hard drive.

Record Duration Flyout Menu

The **Record Duration** flyout menu is used to select a minimum record duration to ignore. A check mark indicates the active selection.

NAVIGATION: Select **Setup|Record Durations Options** from the menu bar.

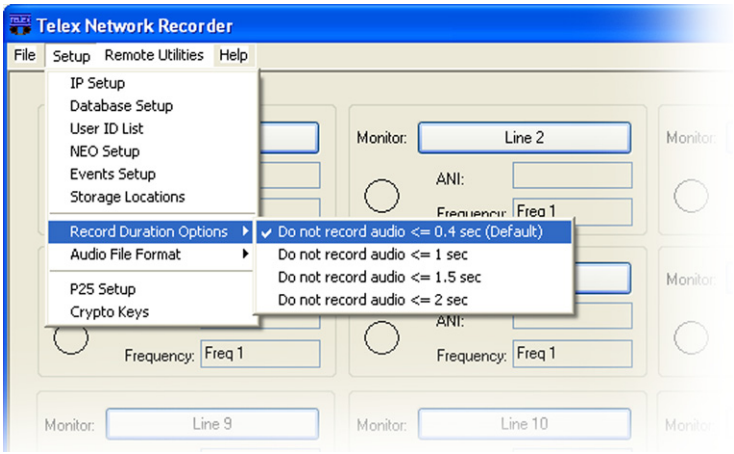


FIGURE 17. Record Durations Options Flyout Menu

Available selections are:

Do not record audio <= 0.4 sec (Default)

Do not record audio <= 1 sec

Do not record audio <= 1.5 sec

Do not record audio <= 2 sec

Audio File Format Option

The **Audio File Format** option is used to configure which audio format the files are saved. .mp3 files are compressed to a size generally 12 to 14 times smaller then .wav files. .Wav files have the highest audio quality but require more hard drive space.

.mp3 Files

The maximum recording time for an .mp3 file is limited to one (1) hour. After one (1) hour, the recorder stops writing the audio file to the hard drive. However, audio can still be heard on the line's Monitor button.

NOTE:

- Traffic must stop/start on this line in order for a new .mp3 audio file to be created.
- In the event of a problem with the .mp3 CODEC, the recorder automatically switches to the .wav file format.
    - A message displays to inform the operator there is trouble with the CODEC and the Recorder is currently recording in the .wav format.

.wav Files

The maximum recording time for a .wav file (.wav) is limited to 15 minutes. After 15 minutes, the recorder stops writing the audio file to the hard drive. However, audio can still be heard on the lines Monitor button.

NOTE: Traffic must stop/start on this line in order for a new audio file to be created.

Audio File Format Flyout Menu

The **Audio File Format** flyout menu is used to select the format type to save the file as. A check mark indicates the active selection.

NAVIGATION: Select **Setup|Audio File Format** from the menu bar.

Available selections are:

Store audio as .mp3 files (Default)

Store audio as .wav files

P25 Setup Parameters Window

The **P25 Setup Parameters** window, shown in Figure 18, is used to setup console parameters.

NAVIGATION: Select **Setup|P25 Setup** from the menu bar.

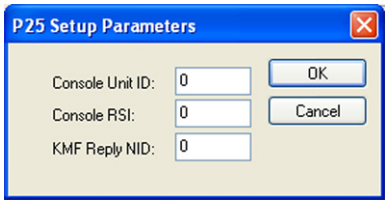


FIGURE 18. P25 Setup Parameters Window

Console Unit ID Field

The **Console Unit ID** field is used to allow unique identification of the Network Recorder for over-the-network re-keying.

Console RSI Field

The **Console RSI** field is used for over the network re-keying operations. Currently, **KMF** (Key Management Facilities) is only supported on EF Johnson*[1] products.

REFERENCE: For more information, see the manufacturer's technical documentation.

KMF Reply NID Field

The **KMF Reply NID** field is used to manage encryption keys. A specific NID or NAC must be used for response messages. Enter the NAC code being used by the KMF in this location.

REFERENCE: For more information, see the manufacturer's technical documentation for proper usage.

The range for this field is *1* to *99999999* (A common value is 659).

1. *See "Copyright Notice" on page 2.*

Cryptography Keys (P25 Only) Window

The **Cryptography Keys (P25 Only)** window, shown in Figure 19, is used to set up crypto keys. Each key is referenced by a 16-bit index value as well as a 64-bit key. Up to 16 crypto keys can be entered.

NOTE: If the recorder is going to be the destination device for **OTAR** (Over the Air Re-keying), then the initial **KEK**s (Key Encryption Keys) need to be entered here. After the initial warm start to the recorder has been completed, a different encrypted file is used to store current KEKs.

Available selections for this field are *0–9* and *A–F*.

NAVIGATION: Select **Setup|Crypto Keys** from the menu bar.

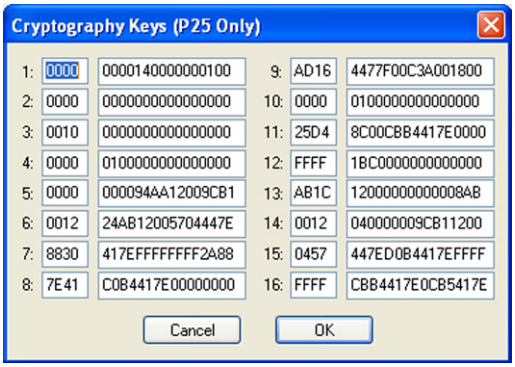


FIGURE 19. Cryptography Keys (P25 Only) Window

Cancel Button

The **Cancel** button is used to discard changes and close the window.

OK Button

The **OK** button is used to accept changes and close the window.

Remote Utilities Menu

The **Remote Utilities** menu contains the following options: *Monitor Setup* and *Remote DB Reviewer Setup*.

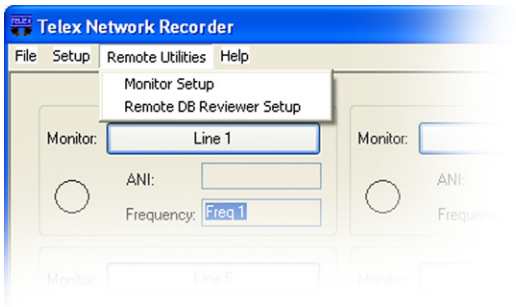


FIGURE 20. Network Recorder Remote Utilities Menu

Remote Monitor Setup Window

The **Remote Monitor Setup** window is used to enable and configure a connection between the remote Network Recorder and the Telex Network Recorder Monitor. The Telex Network Recorder Monitor application is used to capture error messages from the Network Recorder and report them on a remote computer running the Network Recorder Monitor.

For more information, see “Network Recorder Monitor Operation” on page 91.

Remote Database Reviewer Setup Window

The **Remote Database Reviewer Setup** window, shown in Figure 21, is used to configure a connection(s) to Remote Database Reviewer installation(s), enabling other users to access the MySQL database from remote location(s). These settings must be configured from Network Recorder.

REFERENCE: For more information, see the Remote Database Reviewer Technical Manual (P/N F.01U.218.560).

NAVIGATION: Select **Remote Utilities|Remote DB Reviewer Setup** from the menu bar.

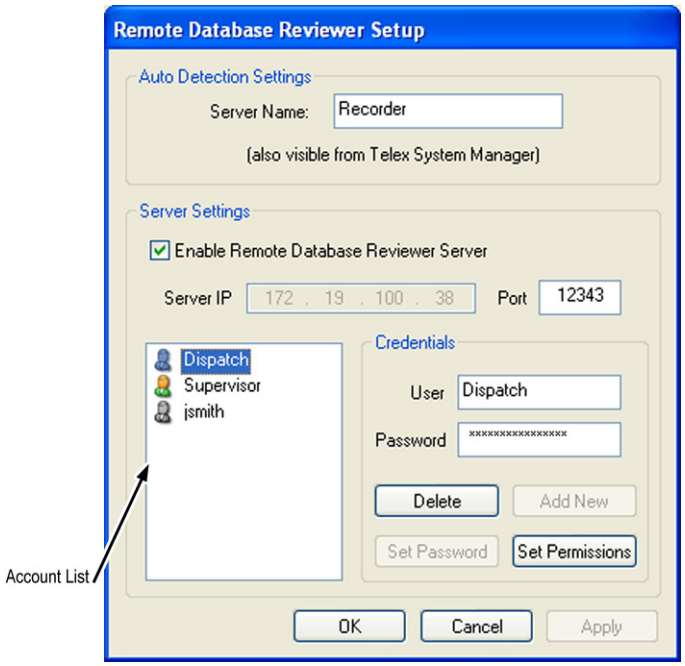


FIGURE 21. Remote Database Reviewer Setup Window—Network Recorder

Auto Detection Settings Group Box

The **Auto Detection Settings** group box contains fields to set up automatic Network Recorder detection. While running, Network Recorder can be detected by Telex System Manager and by Telex Remote Database Reviewer.

Server Name Field

The **Server Name** field is used to specify a name for the Network Recorder installation so the **RDR** (Remote Database Reviewer) user can differentiate between multiple Network Recorder programs running on the same network. While running, Network Recorder is automatically detected by Telex System Manager and Remote Database Reviewer(s). This name appears in the server field when the Network Recorder is detected. The server name can be used to automatically configure the host IP and port settings.

NOTE:

- In the Remote Database Reviewer, this name appears in the Auto Detection list.
- In the Telex System Manager, this name appears in the Device List.

REFERENCE: For more information, see the Telex System Manager Technical Manual (P/N F.01U.196.144).

Server Settings Group Box

The **Server Settings** group box section contains necessary settings to allow the Remote Database Reviewer clients to connect to the Network Recorder program.

Enable Remote Database Reviewer Server Check Box

The **Enable Remote Database Reviewer Server** check box indicates the Network Recorder is allowed to respond to incoming connection requests from the RDR. Once selected, the port number, account list, and credential group box are enabled for configuration.

Server IP Field

The **Server IP** field displays the Network Recorder's IP Address.

This field is for reference only and cannot be modified.

Port Field

The **Port** field is used to configure the port number the Network Recorder uses to recognize connection requests from RDR.

Account List

The **Account List** displays all active and inactive accounts by username. Active accounts have colored user icons next to the account name while inactive accounts have grayed-out icons.

IMPORTANT: An incoming Remote Database Reviewer connection request must log in using one (1) of these account's credentials.

This list can contain *up to 30 users*.

Credentials Group Box

The **Credentials** group box section contains fields to create, delete, or edit user accounts.

User Field

The **User** field displays the currently selected account's username. When creating a new account, the User field is used to specify the new account's username. If no user is selected, the User field is blank.

This field can contain *up to 16 alphanumeric characters*.

Password Field

The **Password** field is used to create a password for a new account. The field displays asterisks to indicate a user is currently selected, or is blank to indicate no user is currently selected.

This field can contain *up to 16 characters*.

IMPORTANT: Passwords cannot be blank.

Add New Button

The **Add New** button is used to create a new account.

To **add a new account to the Network Recorder**, do the following:

1. In the username field, enter a **unique username**.
2. In the password field, enter a **password**.
3. Click **Add New User**.
   The username is added to the Account List.

Delete Button

The **Delete** button is used to remove the currently selected accounts from the list. When the Delete button is clicked the account is removed from the list.

NOTE: The delete button on the keyboard has the same functionality.

Set Password Button

The **Set Password** button is used to set a new password on the currently selected account.

To **change a password**, do the following:

1. From the Account List, select a **username**.
   The account is highlighted and the Credentials group box fields become active.
2. In the password field, enter a **new password**.
3. Click **Set Password**.
   The message password set appears and the new password is temporarily stored.
4. Click **OK**.
   The new password is saved.
   OR
   Click **Cancel** to discard the changes.

Set Permissions Button

The **Set Permissions** button is used to configure which lines the account has access to. Once clicked, the Account Lines Permissions Setup window appears.

Account Line Permissions Setup Window

The **Account Lines Permission Setup** window is used to configure which lines the currently selected account can access.

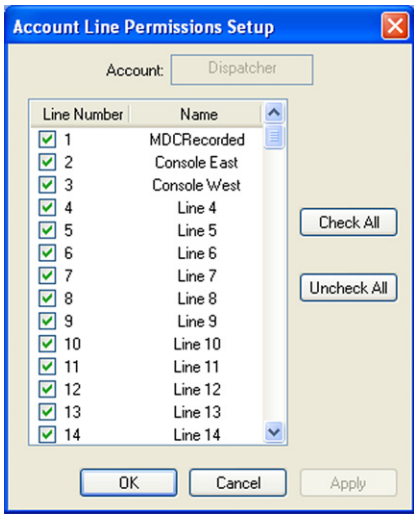


FIGURE 22. Account Line Permissions Setup Window

Account Display Field

The **Account** display field indicates the currently selected account name.

Line Number Column

The **Line Number** column lists all lines in the system.

Name Column

The **Name** column lists the name assigned to each line in the system.

Line Check Box

The **Line** check box indicates the current account can access the line's recordings.

Check All Button

The **Check All** button is used to select all line's check boxes in the list.

Uncheck All Button

The **Uncheck All** button is used to clear all line's check boxes in the list.

OK Button

The **OK** button is used to accept the changes and close the window.

Cancel Button

The **Cancel** button is used to cancel changes and close the window.

Apply Button

The **Apply** button is used to accept changes without closing the window.

To **set permissions on an account**, do the following:

1. From the Remote Database Reviewer Setup window, select an **account**.
2. Click **Set Permissions**.
   The Account Line Permission Setup window appears. By default, all lines are selected.
3. Select or deselect **lines** to allow or deny account permissions.
4. Click **OK**
   The permissions are set and the window closes.
   OR
   Click **Cancel** to discard changes and close the window.

Help Menu

The **Help** menu is used to open the About Telex Network Recorder window to view version and contact information.

Monitor Button

The **Monitor** button, shown in Figure 23, is used to listen to audio currently being recorded. Each monitor button is labeled with the line name assigned during IP Setup. For more information, see “Line Name Field” on page 29.

To **monitor audio traffic on an active line,** do the following:

1. Click **Monitor** for the line you want to monitor.
   Audio plays from the computer’s speaker.
2. Click **Monitor** again, to disengage monitoring audio traffic.
   The monitor is disengaged.

   NOTE: Audio is summed, therefore any combination of lines can be monitored.

Circle Indicator

The **Circle** indicator, shown in Figure 23, displays recording activity for the line. During recording, the indicator changes color to show the type of audio being recorded.

There are *four (4) color* possibilities:

No color - The line is not currently being recorded.

Green - The line is currently recording RX audio traffic.

Blue - The line is currently recording TX audio traffic.

Yellow - The line is currently recording positional microphone audio traffic.

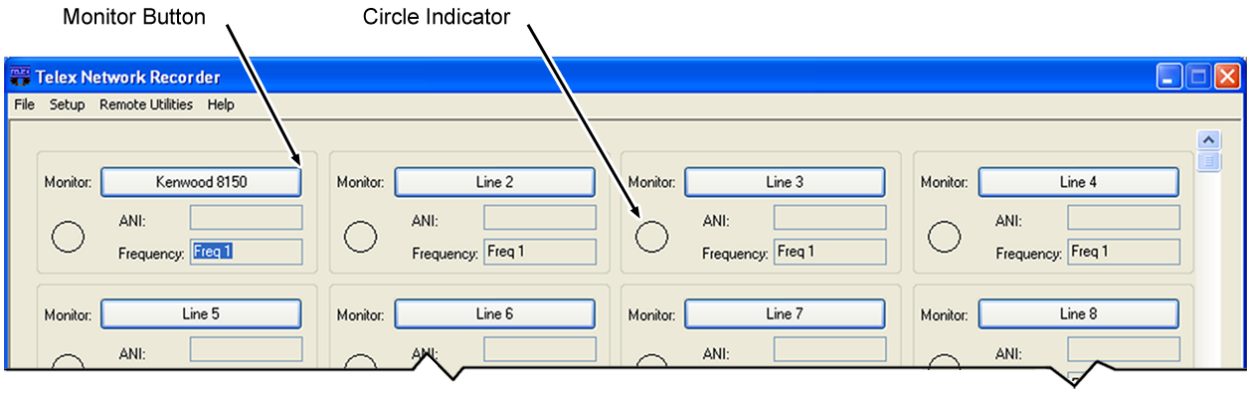


FIGURE 23. Monitor Button and Circle Indictor

ANI Display Field

The **ANI** display field displays the alias of the radio placing the incoming call.

Frequency Display Field

The **Frequency** display field is used to display the frequency name for the line.

Status Bar

The **Status Bar**, shown in Figure 24, indicates status information about the current configuration.

There are four (4) status message possibilities:

General Status Information - Indicates the Network Recorder is recording.

Event Logging - Indicates if event logging is on or off.

Audio File Format - Indicates file format type.

Free disk space - Indicates the amount of available hard disk space.

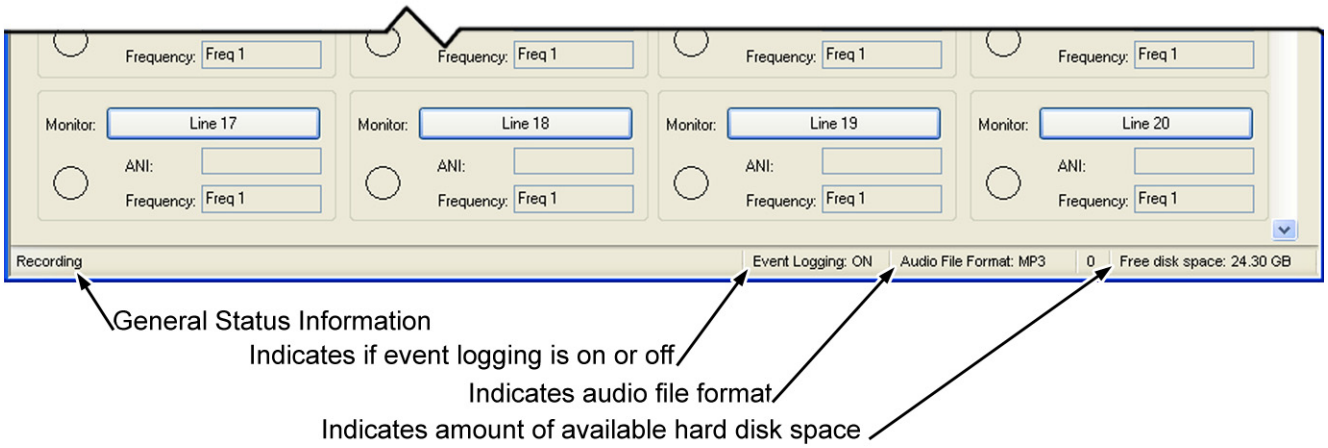


FIGURE 24. Status Bar

CHAPTER 5

Database Reviewer Operation

Telex Archive/Database Reviewer Window

The **Telex Archive/Database Reviewer** window, shown in Figure 25, is used to search and select audio for playback or archive recordings captured by the Network Recorder's SQL database which stores events as they occur. During Network Recorder installation, the Telex Database/Archive Reviewer application is installed and a shortcut placed on the desktop.

To **open the Database/Archive Reviewer**, do the following:

> Click the **Database/Archive shortcut**.
The Telex Archive/Database Reviewer window appears.

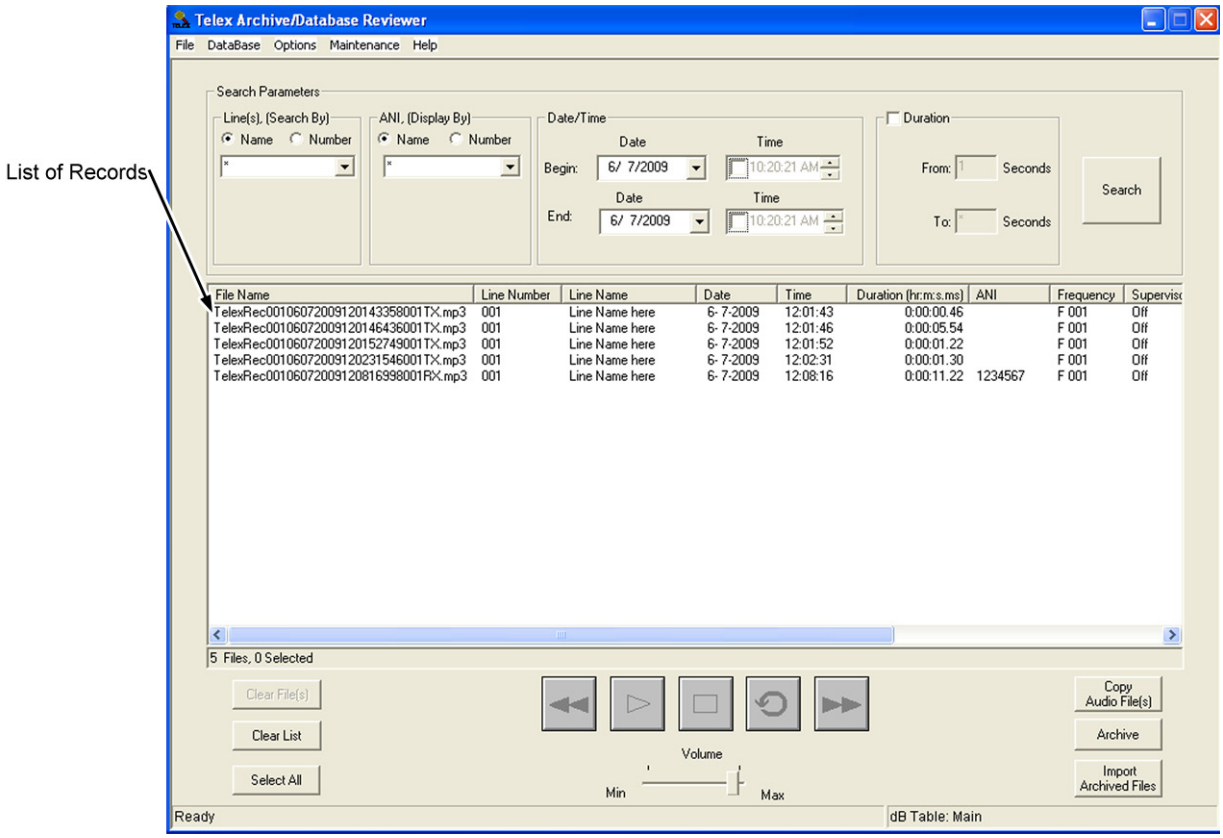


FIGURE 25. Telex Archive/Database Reviewer Window

File Menu

The **File** menu contains commands for working with files.

Exit

Once **Exit** is selected, the Remote Database Reviewer is closed.

NAVIGATION: Select **File|Exit** from the menu bar.

Database Menu

The **Database** menu contains the following menu items: *Load Main Table* and *Database Setup*.

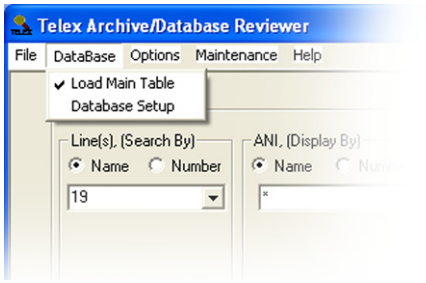


FIGURE 26. Archive/Database Reviewer Database Menu

Load Main Table

The **Load Main Table** command is used to load the main database table into the list of records after archiving. When there is a check mark next to Load Main Table the main table is already in the list of records. Additionally, a message *Database Table: Main* appears in the status bar on the right.

To **connect to the main database**, do the following:

> Select **Database|Load Main Table** from the menu bar.
The right hand status bar displays: Loading Table…… and the main database is loaded.

Database Connection Options Window

The **Database Connection Options** window, shown in Figure 27, is used to enter credentials to connect to the MySQL database and test the connection.

NAVIGATION: Select **Database|Database Setup** from the menu bar.

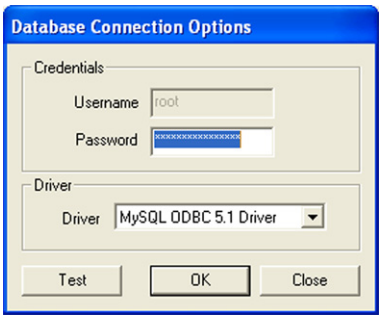


FIGURE 27. Database Connection Options Window

Credentials Group Box

The **Credentials** group box contains fields used to enter login information and test the connection.

Username Field

The **Username** field displays *root*, which is the account Network Recorder uses to connect to the MySQL server. Network Recorder requires access to the database through the root account.

This field is cannot be modified.
The default is *root*.

Password Field

The **Password** field is used to enter a password for logging into the MySQL database root account.

For more information, see “Network Recorder Connection to MySQL” on page 18.

The field can contain *up to 16 characters* or can be left blank.

Test Button

The **Test** button is used to test the connection to the MySQL database. Once selected, a success or failure message appears.

OK Button

The **OK** button is used to save changes and close the window.

Close Button

The **Close** button is used to save the changes and close the window.

Options Menu

The **Options** menu contains the following menu items: *Copy Audio Files, Archive, Import Archived Files,* and *View User IDs.*

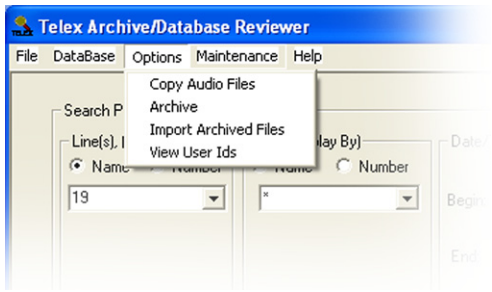


FIGURE 28. Database/Archive Reviewer Options Menu

Files to Copy... Window

The **Files to Copy...** window, shown in Figure 29, is used to copy and save selected files.

NAVIGATION: Select **Options|Copy Audio Files** from the menu bar.
Alternatively, the **Copy** button can be used to open this window.

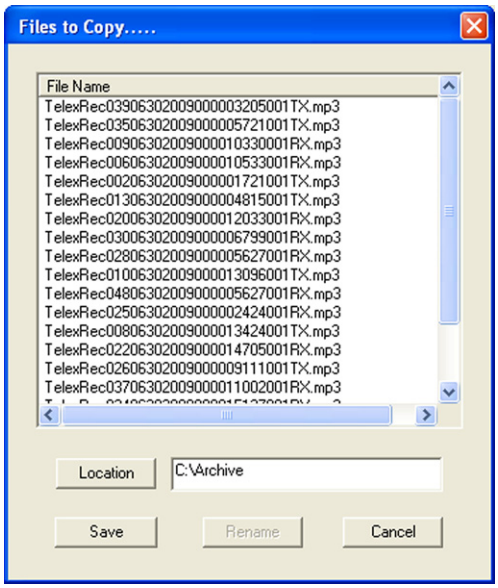


FIGURE 29. Files to Copy Window

File Name Column

The **File Name** column lists selected records for copying.

This list can contain *up to 1000 records*.

Location Button

The **Location** button is used to select a folder to save the records to.

Location Field

The **Location** field displays the folder location the records are copied to when the Save button is clicked.

Save Button

The **Save** button is used to copy and save the records in the list to the location given in the Location field.

To **copy files for offline playback**, do the following:

1. From the list of records, select the **files** to copy.
   OR
   Click **Select All**.

   NOTE: Up to *1000 files* can be copied at one (1) time.
2. Click **Copy Files**.
   The Files to Copy window appears.
   OR
   From the menu bar, select **Options|Copy Audio Files**.
   The Files to Copy window appears.

   TIP: Files can be renamed before saving, see “Rename Button” on page 60.
3. Click **Location**.
4. Select a **folder** to store records in.
5. Click **Save**
   The files are saved to the folder.

   NOTE: From this folder, the DVD/CD burner can be used to create an .mp3/CD disk of the files, or just store them to a computer readable format for playback from some other location.
6. Click **Copy Files**.
   A list of the files are copied from the recording system appears. The file can be renamed.

Rename Button

The **Rename** button is used to rename the selected file.

To **rename a file**, do the following:

1. Select a **record** in the list.
   The record is highlighted.
2. Click **Rename**.
   The record is available for editing.
3. Enter a **new name** for the record.
   The record is renamed.
4. Click a **blank area** in the window.
   The record is deselected.

NOTE: The default record name is given in the following format: Line Number, Date and Time. For example, the file, TelexRec01501172005094307 is interpreted as follows:

Line Number = 015

Date = 01172005 -> 1/17/2005

Time = 094307 -> 9:43:07

Cancel Button

The **Cancel** button is used to discard changes and close the window.

Archive files Window

The **Archive files** window, shown in Figure 30, is used to export, save, and delete database and audio files for archiving purposes. The files can be saved on the Network Recorder's hard disk, on a DVD, or on a CD. A single layer DVD holds approximately 4.7GB of data (or roughly 600 hours of audio). A dual layer DVD holds approximately 8.5GB of data (or roughly 1000 hours of audio). A 740/800 CD can also be used. In addition to the .mp3 files, a text file representing the database entries is created and saved with the audio files during the archive process.

NAVIGATION: Select **Options|Archive** from the menu bar. See Figure 30.

TIP: Read through the process before you begin.

The Archive/Database Reviewer offers two (2) archiving methods:

Archive by date method

- Use the To This Date radio button to specify file dates to archive.
  For more information see "To This Date Radio Button" on page 62.
- Use the Direct to Drive radio button to specify archiving files directly to a DVD or CD using Roxio Easy Media Creator.
  For more information, see "Direct To Drive Radio Button" on page 66.
- Use the Size To DVD/CD radio button to specify file size and DVD/CD location.
  For more information see "Size to CD/DVD Radio Button" on page 69.

Archive Individual Files method

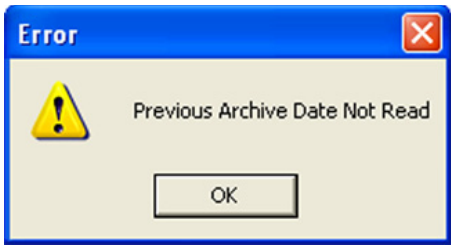
- Use the Archive Individual Files method to specify individual files and location.
  For more information, see "Back Up Button" on page 71.

Error Window

The **Error** window appears with a message *Previous Archive Date Not Read* if records have not already been archived on this installation. The Database Reviewer remembers the date for the last archived files. This warning indicates there is no previous archive date stored and you must manually determine which files to include in your archive.

To **continue to the Archive window,** do the following:

> Click **OK**.
The Archive window appears.



Archive Files by Date Group Box

The **Archive Files by Date** group box contains fields to configure which files to archive and where to store them.

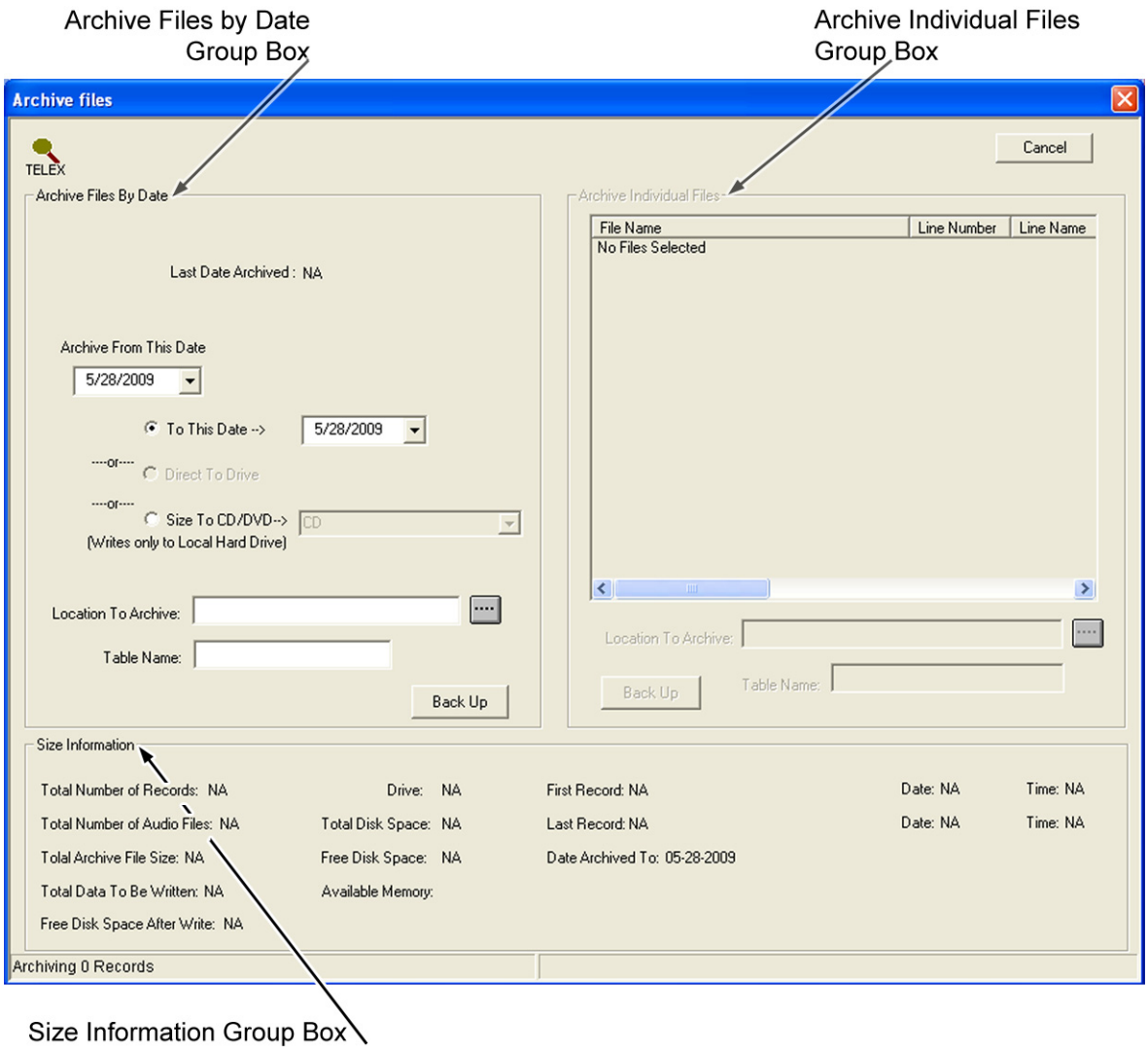


FIGURE 30. Archive files Window

Last Date Archived Status Message

The **Last Date Archived** status message indicates the date files were last archived. If NA appears, files have not been archived from this installation yet.

Archive From this Date Drop Down Menu

The **Archive From this Date** drop down menu is used to select a date to start the archive process.

To This Date Radio Button

The **To This Date** radio button is used to enable the To This Date drop down menu.

To This Date Drop Down Menu

The **To This Date** drop down menu is used to select a date to end the archive process. Once selected, the application is ready to archive files through this date.

Archive Files by Date features

- Archive from one date to another date allows for a more ordered process.

Archive Files by Date limitations

- The archived data can only be written to a folder on the local hard disk. You must then use the DVD writer in a separate step to transfer the archive to a DVD.
- The file size of the archive depends on the accumulated files size of the .mp3 audio file plus overhead from formation which may exceed the size of the medium you are using.

Up to 300,000 records can be archived at one (1) time.

EXAMPLE 1: A one (1) day archiving found 234,049 records. The Total Data To Be Written display field is estimated to be 4.54GB. See Figure 31. The amount of data can be written on an 8/5GB DVD, space permitting. A 740 or 800MB CD or 4.7GB DVD cannot be used.

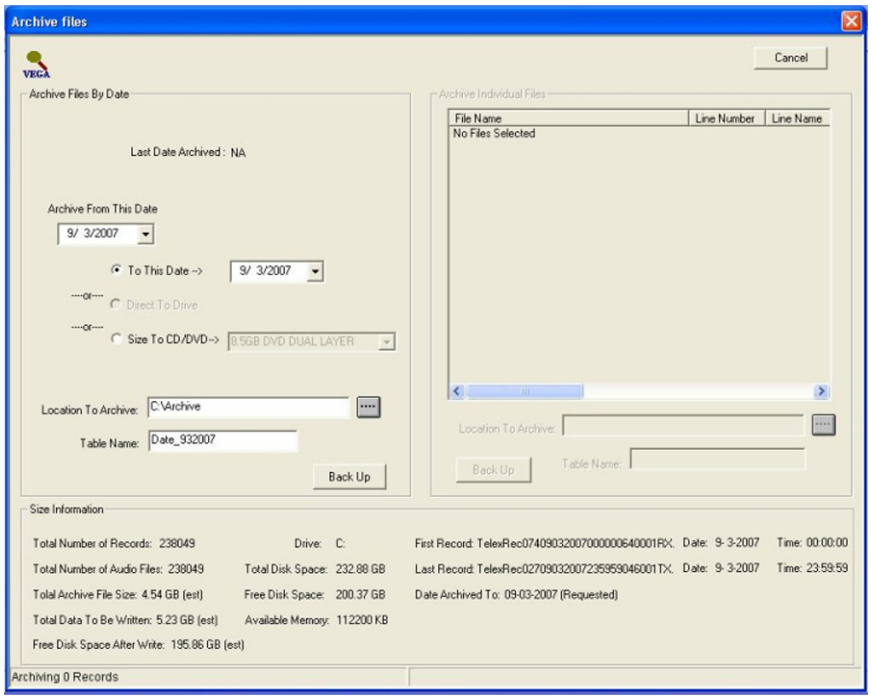


FIGURE 31. Archive by Date Example 1

EXAMPLE 2: A six (6) day archiving found 250,000 records. Total Data To Be Written is estimated to be 5.28GB. See Figure 32. This archive cannot be backed up on a 4.7GB DVD. The folder produced, Date_922007_952007, cannot be subdivided on to separate DVDs. All data must be contained in this folder in order to import it back into the reviewer for retrieval. Click Cancel to adjust the dates, if necessary.

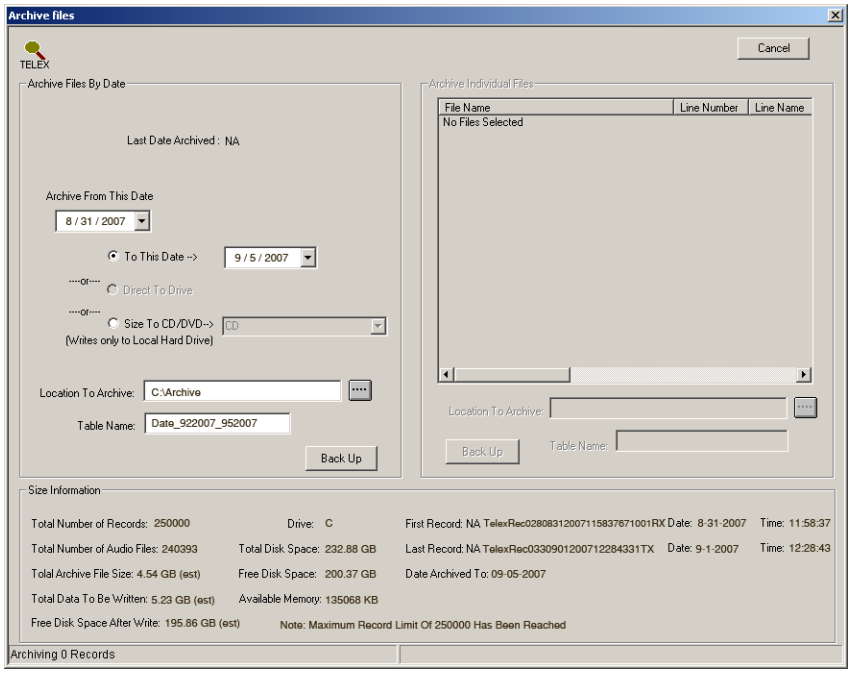


FIGURE 32. Archive by Date Example 2

IMPORTANT:

- It is important you verify both database and audio files are saved together and your archive activity is completed before you delete the original files from the Network Recorder's main database. Deleted files cannot be retrieved from the database once they have been removed.
- Archive data cannot be broken up.
- Do not archive while the Network Recorder is processing incoming calls.
- Use only **CD-R** (write once read many) or **DVD-R** (write once read many) products.
- Do not use **RW** (Re-Writable) disks.

TIP: Before proceeding with the archive process, create a folder to store the archive file.

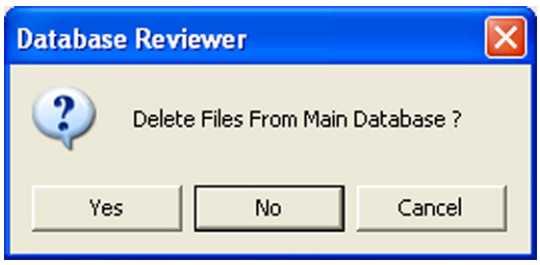
To **archive files by date**, do the following:

1. Ensure all **files** in the list of records are deselected.
2. From the menu bar, select **Options|Archive**.
   The Archive window appears.
   OR
   Click **Archive**.
   The Archive window appears.
3. From the Archive From this Date drop down menu, select the **arrow**.
   A calendar appears.
4. Select a **date**.
   The date appears in the field.
5. From the To This Date drop down menu, click the **arrow**.
   A calendar appears.
6. Select a **date** from the calendar.
   The date appears in the field.
7. In the Location to Archive field, enter the **path** to store archived records.
   The path appears in the Location field.
   OR
   Click **Location to Archive**.
   A Browse window appears.
   - Select a **folder** to store the archived files.
     The path appears in the Location field.
8. In the Table Name field, enter a **name** for the archive file.

   NOTE: View the Size Information group box for **file specifications**.
   The information given in the Size Information group box changes depending on selections.
9. From the Size Information group box, *v*erify there is enough **space**, in the Free Disk Space After Write field before continuing.
10. Click **Back Up**.
    The following text displays in the status bar:
    Checking Drive Space……..
    Opening Database Records……..
    Ready To Archive
    The Database Reviewer window appears. A pre-calculation of the parameters displayed in the Size Information group box is performed. Ready to Archive appears in the status bar and the window appears.

    NOTE:

    - Once this step is executed, the process cannot be stopped. Depending on file size and whether or not files are being deleted, this process can take as long as two (2) hours to complete.
    - For more information, see “Size Information Group Box” on page 75.



11. When initially archiving records, click **No** to retain the files in the database.
The audio and data files are saved to the CD, and the audio and data files are retained in the database. As the process proceeds, the total number of records archived displays in the status bar.
    - Verify the **archive file** is successfully created.

    OR
    When archiving the second time, click **Yes** to delete files in the database.
    The audio and data files are saved to the CD, and the audio and data files are deleted from the database.
12. After a successful archive file is created, follow **steps 7–11** a second time.
The archive is stored.

IMPORTANT: TelexAR_ is tagged to the beginning of the file name on all archived folders.
The filename is X:\TelexAR_ DateMM_DD_YYYY (Where *X* is the drive letter).
Do not rename the folder.

The archive folder contains two (2) sub folders Tr_Audio and Tr_Table. The Tr_Audio contains the .mp3 audio files in sub folders of dates and hours and Tr_Table contains all audio file and event records. The Tr_Table file is used to import archive data back in to the Archive/Database Reviewer.

To **make a removable copy of the file**, do the following:

1. Insert a **DVD or CD** into the computer.
2. Copy the **data and audio file folder**, *TelexAR_XXXX,* to the DVD/CD.

REFERENCE: For more information, see the manufacturer's documentation.

Direct To Drive Radio Button

The **Direct to Drive** radio button indicates this is the default CD/DVD archiving method when Roxio Media Creator 7 is installed on the computer running the Database Reviewer. Otherwise, the radio button is grayed-out and not available for selection.

Direct to Drive features

- Writes files directly to a 4.7GB DVD or 740/800MB CD.
- Tracking dates manually is unnecessary.
- Pre-calculating file size is unnecessary.
- Maps only to a CD or DVD.

IMPORTANT:

- It is important you verify both database and audio files are saved together and your archive activity is completed before you delete the original files from the Network Recorder's main database. Deleted files cannot be retrieved from the database once they have been removed.
- Archive data cannot be broken up.
- Do not archive while the Network Recorder is processing incoming calls.
- Use only **CD-R** (write once read many) or **DVD-R** (write once read many) products.
- Do not use **RW** (Re-Writable) disks.

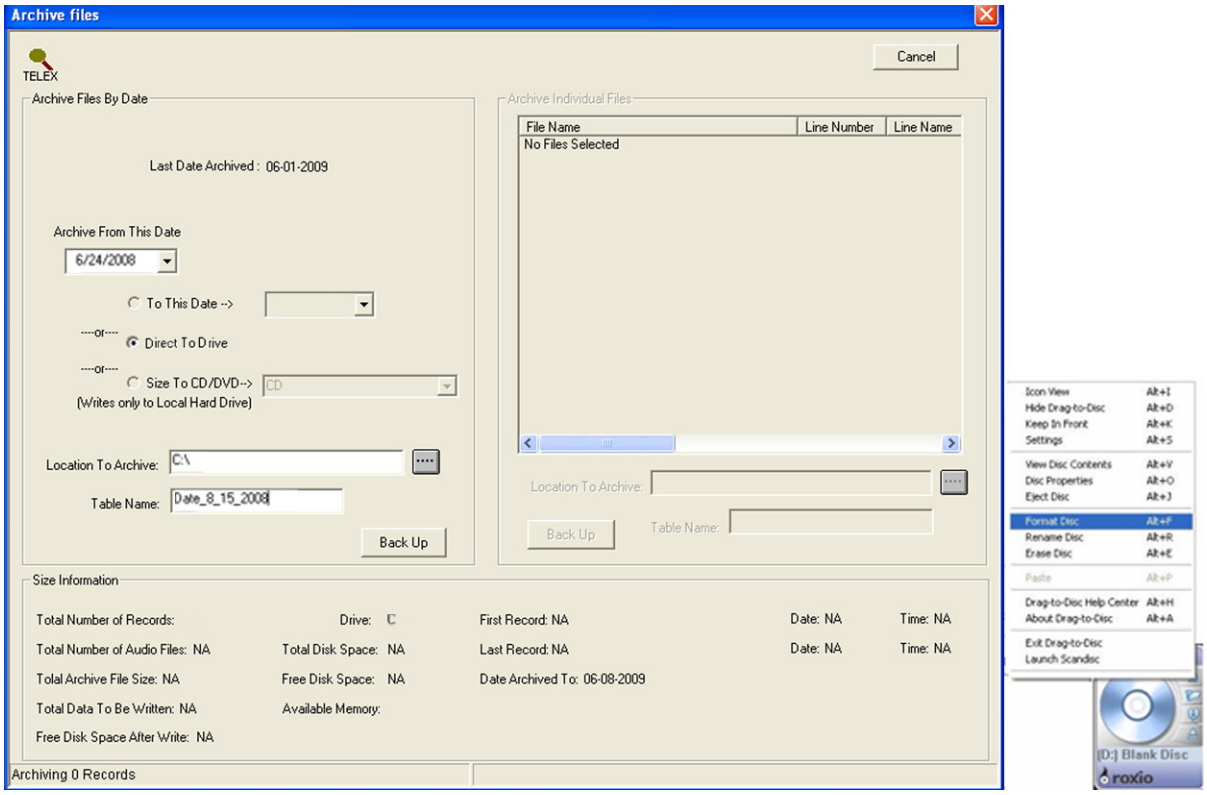
To **archive files using Direct to Drive (Roxio Media Creator 7)**, do the following:

1. Right-click **Roxio Drag to Disk** image.
A shortcut menu appears.
2. Select **Format Disk**.
3. Click **Quick Format**.

4. Click **OK**.
   The disk is formatted and ready for use.
5. Ensure all **files** in the list of records are not selected.
6. From the menu bar, select **Options|Archive**.
   The Archive window appears

   NOTE: If an Error window appears, click **OK**.
   The Archive window appears.
7. In the Archive From this Date field, enter the **archive start date**.
   OR
   Accept the **default start date** entered in the Archive From this Date field.

   NOTE: The Archive From this Date field and the Last Date Archived status message automatically update after the first archive is performed. These dates are remembered and appear in the Archive window as the default start date.



8. Select the **Direct To Drive** option.
9. In the Location to Archive field, enter the **path** to store archived records.
   The path appears in the Location field.
   OR
   Click **Location to Archive**.
   A Browse window appears.
10. Select a **folder** to store the archived files.
    The path appears in the Location field.
11. In the Table Name field, enter a **name** for the archive file.

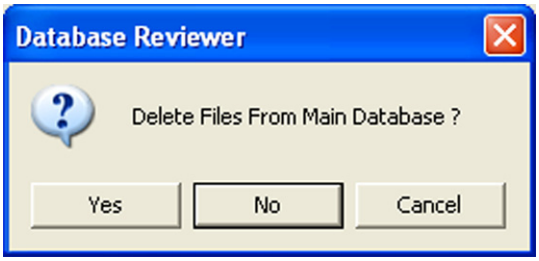
    NOTE: View the Size Information group box for file specifications.
    The information given in the Size Information group box changes depending on selections. The Free Disk Space After Write disappears and the Date Archived to status message changes to NA when using the direct to drive process.

12. From the Size Information group box, verify there is **enough space** in the Free Disk Space After Write field before continuing.

    NOTE: The Date Archived To status message changes to NA because the archive process begins with the date entered in the Archive From This Date field and continues until a single CD or DVD is full or the last record in the database is reached. File size is not pre-calculated. The end date is not known until the archive process is complete. After the file is archived the end date appears in the Date Archived To status message.

13. Click **Back Up**.
    The following text displays in the status bar:
    Checking Drive Space……..
    Opening Database Records……..
    Ready To Archive
    The Database Reviewer window appears.
    Creating Archive... ... ... appears in the status bar.

    NOTE: Once this step is executed, the process cannot be stopped. Depending on file size and whether or not files are being deleted, this process can take as long as two (2) hours to complete. As the process proceeds, the total number of records archived displays in the status bar.



14. When initially archiving records, click **No** to retain the files in the database.
    The audio and data files are saved to the CD, and the audio and data files are retained in the database.
    Done appears in the status bar.
    - Verify the **archive file** is successfully created.

    OR
    When archiving the second time, click **Yes** to delete files in the database.
    The audio and data files are saved to the CD, and the audio and data files are deleted from the database.
    Done appears in the status bar.
15. After a successful archive file is created, follow **steps 7–14** a second time.
    The archive is stored.

IMPORTANT: TelexAR_ is tagged to the beginning of the file name on all archived folders.
Filename is X:\TelexAR_ DateMM_DD_YYYY (Where *X* is the drive letter).
Do not rename the folder.

The archive folder contains two (2) sub folders Tr_Audio and Tr_Table. The Tr_Audio contains the .mp3 audio files in sub folders of dates and hours and Tr_Table contains all audio file and event records. The Tr_Table file is used to import archive data back in to the Archive/Database Reviewer.

Size to CD/DVD Radio Button

The **Size to CD/DVD** radio button is used to prepare archive files for export to a CD or DVD by first saving the files to the C-drive. During the Size to CD/DVD process, drive space and file size is calculated and reported. Once the user selects either Yes or No from the Database Reviewer message, the archive process begins. Archiving cannot be stopped in midstream.

Up to 300,000 records can be archived at one (1) time.

Size to CD/DVD features

- Writes approximately 650MB of data to a CD.
- Writes approximately 3.7GB of data to DVD.
- Writes approximately 6.50GB of data to a dual layer DVD.

Size to CD/DVD limitations

- This is a two (2) step process. The archived data is sized for a CD or DVD (single or dual layer) and then saved to the local hard drive. After files are archived on the local hard drive you are required to use a CD/DVD writer to write the files to a CD/DVD.
- Due to additional overhead created by sector sizing and CD/DVD formatting, the CD/DVD holds less than its stated capacity. Always verify the archive files are saved to the CD/DVD before you delete them from the database.

IMPORTANT:

- It is important that you verify both database and audio files are saved together and your archive activity is completed before you delete the original files from the Network Recorder's main database. Deleted files cannot be retrieved from the database once they have been removed.
- Archive data cannot be broken up.
- Do not archive while the Network Recorder is processing incoming calls.
- Use only **CD-R** (write once read many) or **DVD-R** (write once read many) products.
- Do not use **RW** (Read Write) disks.

To **archive files using Size to CD/DVD**, do the following:

1. Ensure all **files** in the list of records are not selected.
2. From the menu bar, select **Options|Archive**.
   The Archive window appears.
3. In the Archive From this Date field, enter the **archive start date**.
   OR
   Accept the **default start date** entered in the Archive From this Date field.

   NOTE: The Archive From this Date field and the Last Date Archived status message automatically update after the first archive is performed. These dates are remembered and appear in the Archive window.
4. Select **Size To CD/DVD**.
5. From the Size to CD/DVD drop down menu, select **CD**.
   OR
   From the Size to CD/DVD drop down menu, select **DVD**.

6. In the Location to Archive field, enter the **path** to store archived records.
   The path appears in the Location field.
   OR
   Click **Location to Archive**.
   A Browse window appears.
   - Select a **folder** to store the archived files.
     The path appears in the Location field.
7. In the Table Name field, enter a **name** for the archive.
8. Click **Back Up**.
   The following text displays in the status bar:
   Checking Drive Space……..
   Opening Database Records……. (This may take a while if the database is very large)
   Checking File Size……..
   The Database Reviewer message appears.
   Creating Archive... ... ... appears in the status bar.

   NOTE:
   - Once this step is executed the process cannot be stopped. Depending on file size and whether or not files are being deleted, this process can take as long as two (2) hours to complete. As the process proceeds, the total number of records archived displays in the status bar.
   - For more information, see “Size Information Group Box” on page 75.
9. When initially archiving records, click **No** to retain the files in the database.
   The audio and data files are saved to the CD, and the audio and data files are retained in the database.
   Done appears in the status bar.
   - Verify the **archive file** is successfully created.

   OR
   When archiving the second time, click **Yes** to delete files in the database.
   The audio and data files are saved to the CD, and the audio and data files are deleted from the database.
   Done appears in the status bar.
10. After a successful archive file is created, follow **steps 1–9** a second time.
    The archive is stored.

IMPORTANT: TelexAR_ is tagged to the beginning of the file name on all archived folders.
The filename is X:\TelexAR_ DateMM_DD_YYYY (Where *X* is the drive letter).
Do not rename the folder.

The folder contains two (2) sub folders Tr_Audio and Tr_Table. The Tr_Audio contains the .mp3 audio files in sub folders of dates and hours and Tr_Table contains all audio file and event records. The Tr_Table file is used to import archive data back in to the Archive/Database Reviewer.

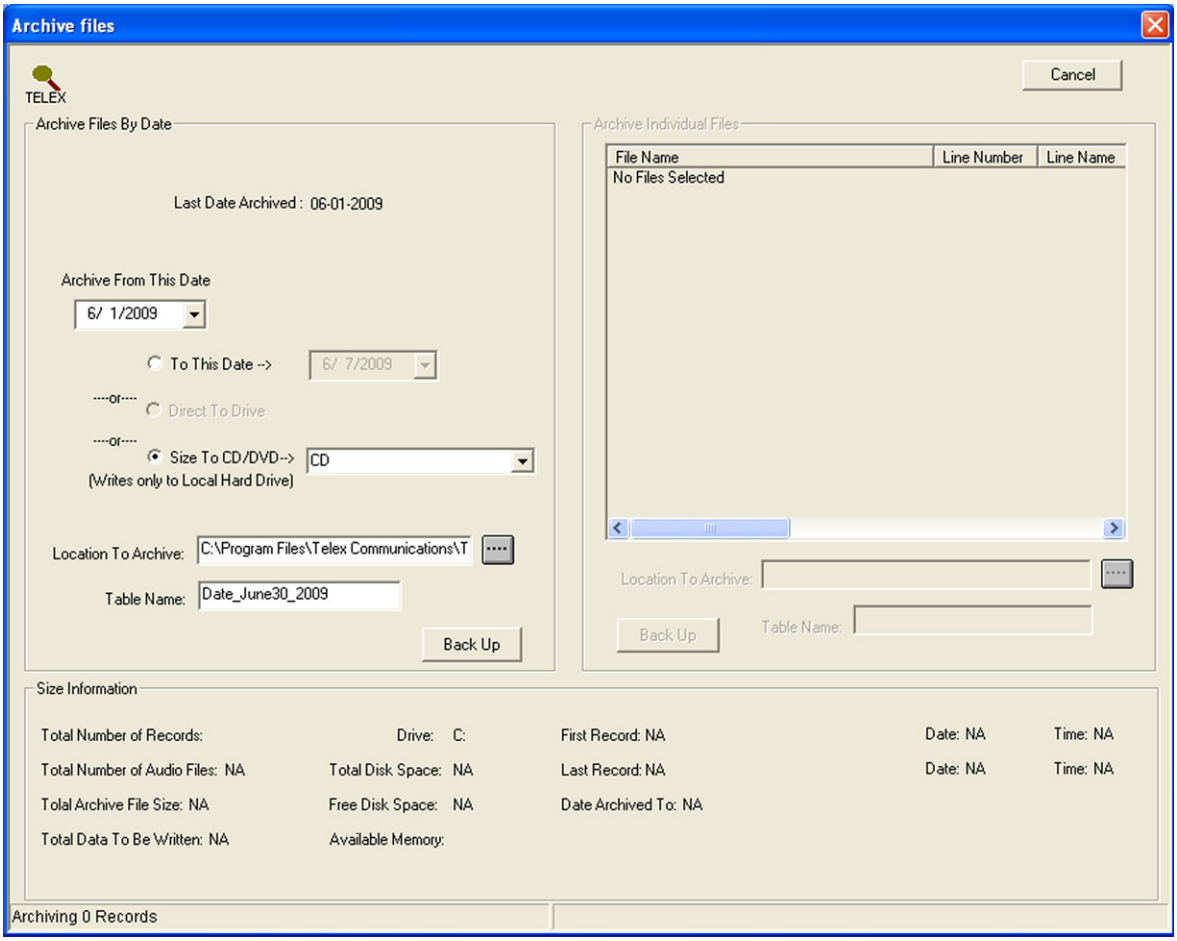


FIGURE 33. Archive Files Window

Location To Archive Field

The **Location to Archive** field displays the path to the archive folder.

Location to Archive Browse Button

The **Location to Archive** browse button is used to locate and select a folder for the path.

Table Name Field

The **Table Name** field is used to specify a name for the archive file.

This field can contain *up to 40 alphanumeric characters* including underscores (_).
Spaces are not allowed.

Back Up Button

The **Back Up** button is used to begin the archive process.

Archive Individual Files Group Box

The **Archive Individual Files** group box contains fields to specify archive folder location and name.

Selected Files List

The **Selected Files List** displays files selected for archiving. This window is only active if files from the list of records are selected.

Selected File List Columns

The **Selected File List** columns display information about the file. Use the scroll box to view hidden columns.

Available column selections are: *File Name, Line Number, Line Name, Date, Time, Duration (hr:ms:s.ms), ANI, Frequency, Supervisor, Crosspatch, Scan, NEO,* and *TxIP Address*.

Location To Archive Field

The **Location to Archive** field displays the path to the archive folder.

Location to Archive Browse Button

The **Location to Archive** browse button is used to specify a path to the archive folder.

To **locate a folder for archive files**, do the following:

1. Click **Browse**.
   The Browse to Folder window appears.
2. From the list, select a **folder**.
   The Browse to Folder window closes and the path to the folder appears in the Location to Archive field.

Table Name Field

The **Table Name** field is used to specify a name for the archive file.

This field can contain *up to 40 alphanumeric characters* including underscores (_).
Spaces are not allowed.

Back Up Button

The **Back Up** button is used to begin the archive process.

Archive Individual Files features

- An archive can be created daily, hourly or by the minute.

IMPORTANT:

- It is important you verify both database and audio files are saved together and your archive activity is completed before you delete the original files from the Network Recorder's main database. Deleted files cannot be retrieved from the database once they have been removed.
- Archive data cannot be broken up.
- Do not archive while the Network Recorder is processing incoming calls.
- Use only **CD-R** (write once read many) or **DVD-R** (write once read many) products.
- Do not use **RW** (Read Write) disks.

To **archive a list of individual files**, do the following:

1. From the Telex Archive/Database Reviewer window, select **files** to archive.

   NOTE: Up to *1000 individual records* can be archived.

2. Select **Options|Archive** from the menu bar.
   The Archive window appears.
3. From the location field, enter a **path** to store the archive file to.
   OR
   Click **browse**.
   The Browse for Folder window appears.
   - Select the **folder** to store the archive file in.
4. Click **OK**.
5. In the Table Name field, enter a **name** for the file.
6. Click **Back Up**.
   The following text displays in the status bar:
   Checking Drive Space……..
   Opening Database Records…….. (This may take a while if the database is very large)
   Checking File Size……..
   The Database Reviewer message appears.
   Creating Archive... .... appears in the status bar.

   NOTE: Once this step is executed, the process cannot be stopped. Depending on file size and whether or not files are being deleted, this process can take as long as two (2) hours to complete. As the process proceeds, the total number of records archived displays in the status bar.

7. When initially archiving records, click **No** to retain the files in the database.
   The audio and data files are saved to the CD, and the audio and data files are retained in the database.
   When the process is complete, Done appears in the status bar.
   - Verify the **archive file** is successfully created.

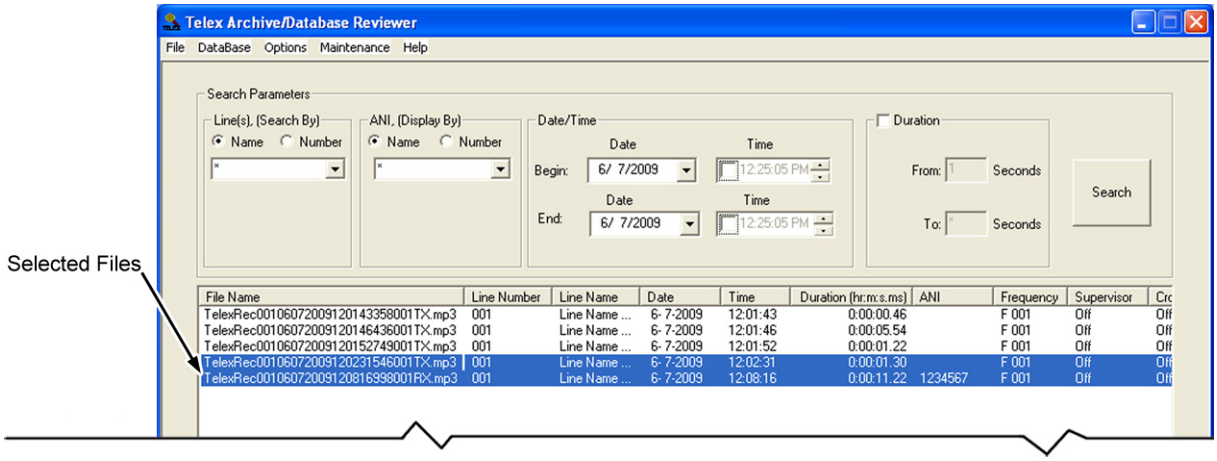
   OR
   When archiving the second time, click **Yes** to delete files in the database.
   The audio and data files are saved to the CD, and the audio and data files are deleted from the database.
8. After a successful archive file is created, follow **steps 3–6** a second time.
   The archive is stored.

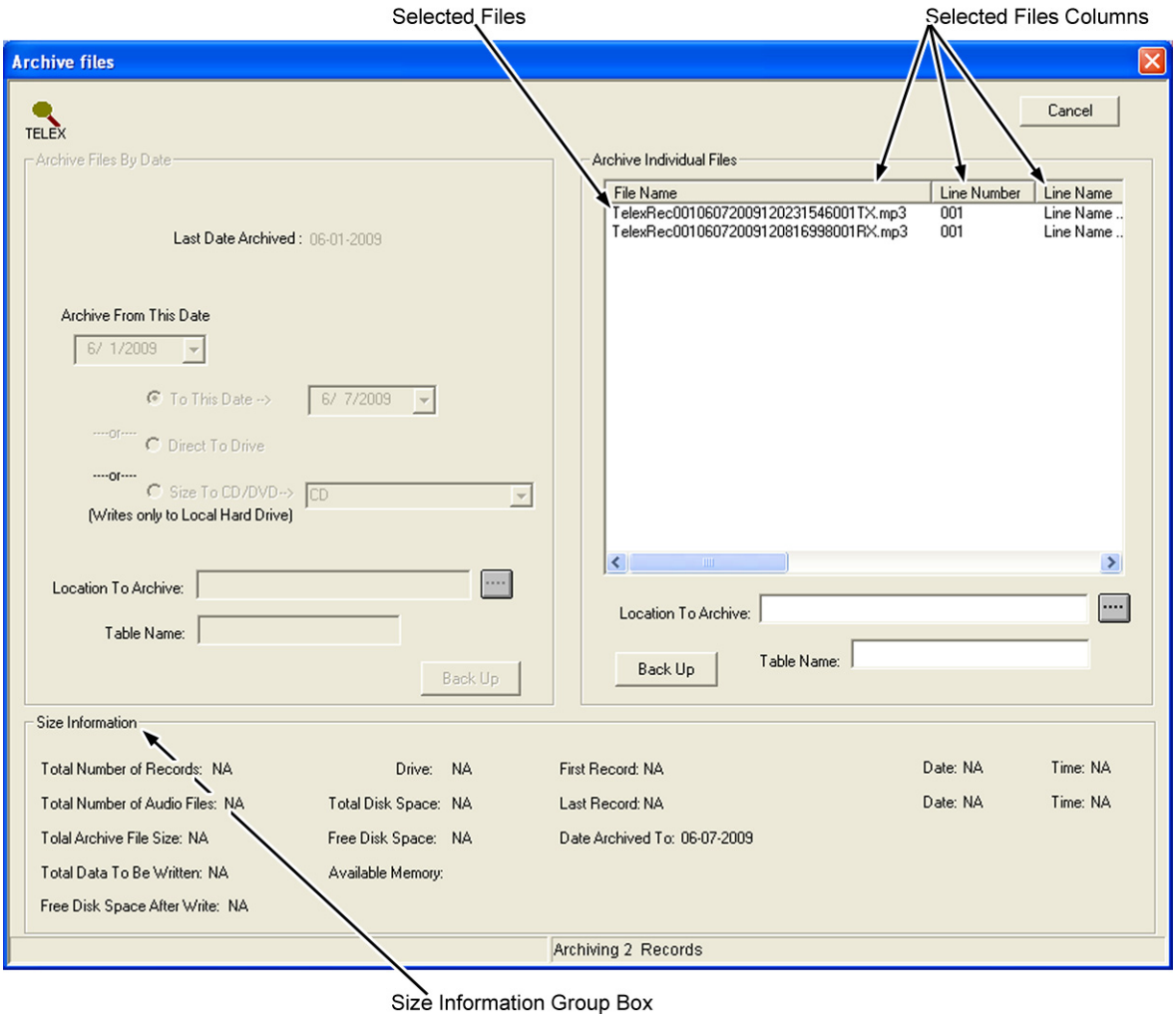
IMPORTANT: TelexAR_ is tagged to the beginning of the file name on all archived folders. Filename is X:\TelexAR_ DateMM_DD_YYYY (Where *X* is the drive letter). Do not rename the folder.

The folder contains two (2) sub folders Tr_Audio and Tr_Table. Tr_Audio contains the .mp3 audio files in sub folders of dates and hours and Tr_Table contains all audio file and event records. The Tr_Table file is used to import archive data back in to the Archive/ Database Reviewer.

To **make a removable copy of the file**, do the following:

1. Insert a **DVD or CD** into the computer.
2. Copy the **data and audio file folder**, *TelexAR_XXXX,* to the DVD/CD.





Size Information Group Box

The **Size Information** group box, shown in Figure 30, contains status messages for records selected in the Archive Files By Date group box or the selected files list.

There are 14 status messages:

Total Number of Records -	Total number of recorded audio files and events, such as Frequency TX and Monitor.
Total Number of Audio Files -	Total number of .mp3 files.
Total Archive File Size -	An estimate of the archive files size.
Total Data To Be Written -	An estimate of the disk space required to store the archive file.
Free Disk Space After Write -	Amount of disk space left on the hard drive after records are stored.
Drive -	Selected hard drive.
Total Disk Space -	Total hard drive disk space.
Free Disk Space -	Amount of free disk space left on the hard drive.
Available Memory -	Available memory on the hard drive.
Note -	Notifies the user when something noteworthy happens.
First Record -	Lists the first record included in the archive process.
Last Record -	Lists the last record included in the archive process.
Date Archived To -	The archived to date request or the actual date archive to.

NOTE: After the information is calculated, *Ready To Archive* appears in the status bar.

Import Archive Table Window

The **Import Archive Table** window, shown in Figure 34, is used to select a file to import archived records. During the import process the Import Archive Table window's status bar displays the current database table name. This indicates the Archive/ Database Reviewer is currently connected to the main database and is conducting all searches on the indicated database. Once the search is finished, the status message changes.

NAVIGATION: Select **Options|Import Archived Files** from the menu bar.

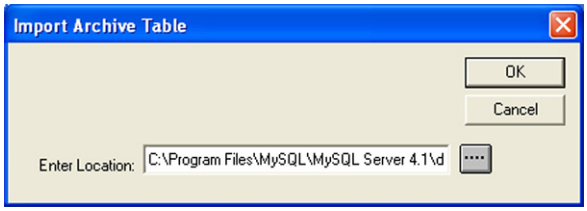


FIGURE 34. Import Archive Table

OK Button

The **OK** button is used to accept the folder in the Enter Location field and import records into the list of records. Once clicked, the files are imported into the Database Reviewer.

Cancel Button

The **Cancel** button is used to discard changes and close the window.

Enter Location Field

The **Enter Location** field displays the path to the archive folder.

Browse Button

The **Browse** button is used to locate and select an archive folder.

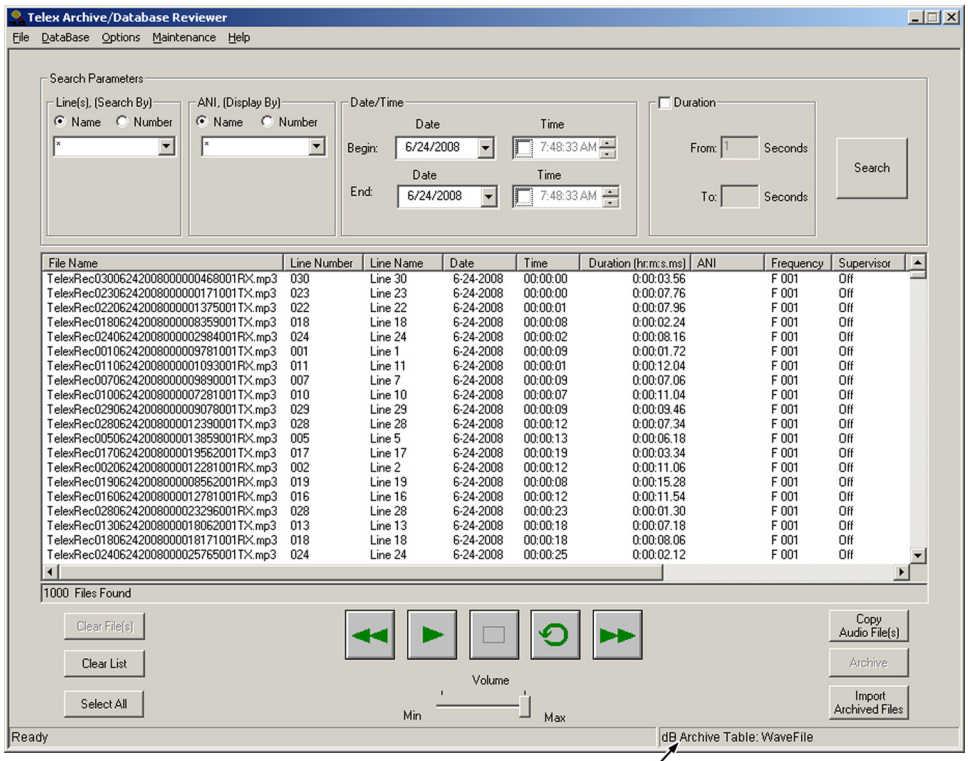
To **import archived files**, do the following:

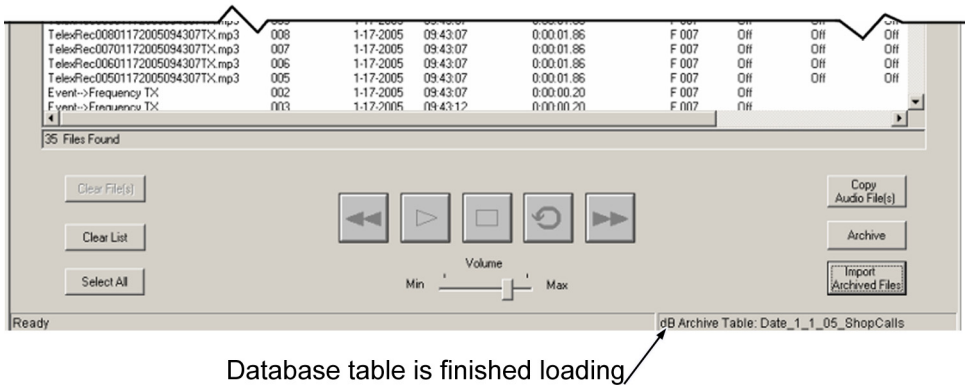
1. Click **Import Archived Files**.
   The Import Archive Table window appears.
   OR
   From the menu bar, select **Options|Import Archived Files**.
   The Import Archive Table window appears.
2. In the Enter Location field, enter a **path** to the archive folder.
   OR
   Click **Browse**.
   The Browse to Folder window appears.
   - Select a **folder** to import archive files from.
3. Click **OK**
   The path to the archive folder appears in the Enter Location field.
4. Click **OK**.
   The files from the archive folder are loaded in the list of records. The status bar displays Loading Table. After the table is loaded the status bar displays the archive table's name in the status bar (dB Archive Table: TeleexAR_Date_1_1_05_ShopCalls). The Line number and ANI have defaulted to the wildcard character (*). The search parameters beginning date is set to the beginning date of the archive and the search parameter, ending date is set to the current date. The beginning and ending time parameters are now off, by default.

   NOTE: Use the Archive/Database Reviewer as you normally do to perform searches and playback audio.

To **connect back to the main database**, do the following:

> Select **Database|Load Main Table** from the menu bar.
Loading Table... appears in the status bar and the main database table loads.





User IDs Window

The **User IDs** window, shown in Figure 35, is used to view all ANI names and ID numbers in the system. This list is configured in the Network Recorder and is used in the Database Reviewer for reference.

NAVIGATION: Select **Option|View User IDs** from the menu bar.

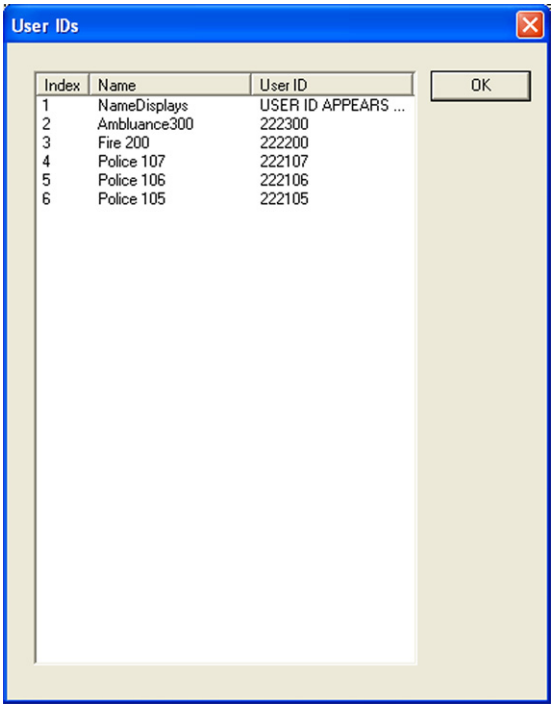


FIGURE 35. User ID Window

OK Button

The **OK** button is used to close the window.

Maintenance Menu

The **Maintenance** menu contains the following menu items: *Optimize Database, Repair Database 1, Repair Database 2,* and *Repair Database 3*.

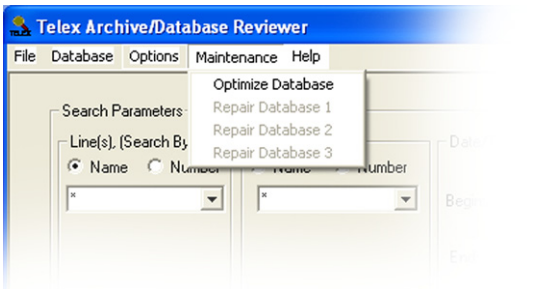


FIGURE 36. Maintenance Menu

IMPORTANT: You are required to contact technical support for help with database maintenance. Performing maintenance without qualified help can result in unintended consequences.

Technical Support

Phone: (800) 898-6723
E-mail: TelexDispatchtechsupport@us.bosch.com

Help Menu

The **Help** menu is used to open the About Database Reviewer window. The About Database Reviewer is used to view the version number, manufacturer's address, phone number and copyright date.

Search Parameters Group Box

The **Search Parameters** group box contains several filter controls for defining search parameters.

Line(s), (Search by)

The **Line(s)**, **(Search by)**, shown in Figure 37, is used to filter results based on criteria in the Line Name or Line Number column.

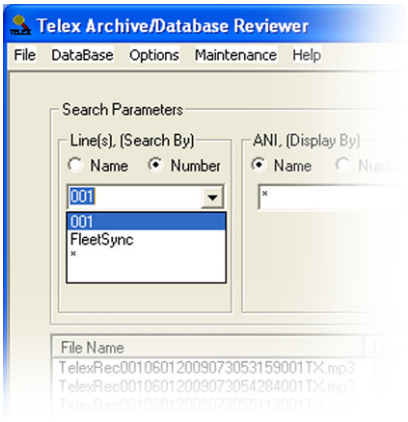


FIGURE 37. Line(s) Search Filter Control

Name Radio Button

The **Name** radio button is used to limit the search to specific names in the list. The search is conducted based on the line's name in the combo box. Otherwise, the search is based on the line number.

To **enter name search criteria**, do the following:

1. Select the **Name** radio button.
2. In the Line(s) combo box, enter a **line name**.
   OR
   From the Line(s) combo box, select a **line name**.
   OR
   In the Line(s) combo box, enter an **asterisk** (*) to set the criteria to wildcard and capture all records regardless of name.
   Records meeting criteria selected in the Search Parameters box appear.

Use the following format for line name criteria:

Line X	Searches for all calls received on Line X, where Line X, in the example, is the name assigned to the line in Network Recorder.
Line X, Line Y, Line Z	Searches for all calls received on multiple lines, where line names are separated by commas with no spaces.
** (asterisk)*	Searches for all calls on any line name.

NOTE: Once criteria is entered, the combo box retains the last 12 names and line number entries.

Number Radio Button

The **Number** radio button is used to limit the search to specific lines in the list. The search is conducted based on the line number(s) in the combo box. Otherwise the search is based on line name.

To **enter line(s) number search criteria**, do the following:

1. Select the **Line(s)** radio button.
2. In the Line(s) combo box, enter the **line(s) number**.
   OR
   From the Line(s) combo box, select a **line number**.
   OR
   In the Line(s) combo box, enter an **asterisk** (*) to set the criteria to wildcard and capture all records regardless of line number.
   Records meeting criteria selected in the Search Parameters box appears.

Use the following format for line number criteria:

1, or *01,* or *001* -	Searches for calls on line 1.
1,2,3, or *01,02,03,* or *001,002,003*	Searches for calls on lines 1, 2, and 3, up to a maximum of five (5) lines, where line numbers are separated by commas with no spaces.
asterisk ( )*	Searches for all calls on any line number.

NOTE: Once criteria is entered, the combo box retains the last 12 name and line number entries.

Line(s) (Search by) Combo Box

The **Line(s) (Search by)** combo box is used to select or enter a line, number or asterisks (*) to filter on. As asterisk (*)is used for a wildcard.

This field can contain *up to 12 entries*.

ANI, (Display By) Filter Control

The **ANI** (Automatic Number Identification) **(Display By)** filter control, shown in Figure 38, is used to filter results based on criteria in the ANI column.

EXAMPLE: Where an alias table entry name is HELP and the number is 2131004.
If the Name radio button is selected, HELP appears in the ANI column.
OR where no ANI name is assigned to the number, 2131004 appears in the ANI column.

If the Number radio button is selected, 2131004 appears in the ANI column.

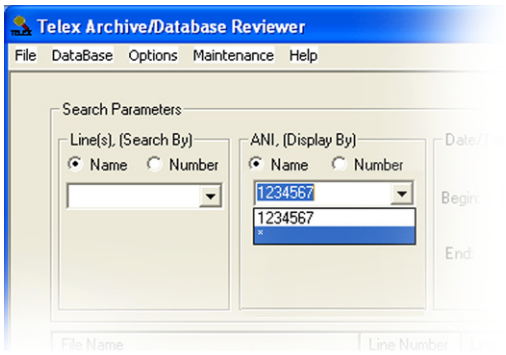


FIGURE 38. ANI Filter Control

Name Radio Button

The **Name** radio button is used to limit the search to specific ANI names in the list. The search is conducted based on the ANI name(s) in the combo box. Otherwise the search is based on the line number's ANI name.

To **enter ANI name(s) search criteria**, do the following:

1. Select the **Name(s)** radio button.
2. In the combo box, enter a **ANI name**.
   OR
   In the combo box, select a **ANI name**.
   OR
   In the combo box, enter an **asterisk** (*) to set the criteria to wildcard and capture all records regardless of ANI name.
   Records meeting criteria selected in the Search Parameters box appears.

Use the following format for ANI name criteria:

Line A,	Searches for all calls received by ANI name, where *Line A* is the ANI name assigned in Network Recorder.
Line A, Line B, Line C	*S*earches for all calls received by multiple ANI names, where ANI names are separated by commas with no spaces.
** (asterisk)*	Searches for all calls using any ANI name.

NOTE: Once criteria is entered, the combo box retains the last 12 ANI name and number entries.

Number Radio Button

The **Number** radio button indicates the button is used to limit the search to specific ANI numbers in the list. The search is conducted based on the ANI number(s) in the combo box. Otherwise, the search is based on the line's ANI name.

ANI (Display) Combo Box

The **ANI (Display)** combo box is used to select or enter an ANI name, number or asterisks (*) to filter on. As asterisk (*) is used for a wildcard.

This combo box can contain *up to 12 entries*.

Date/Time Filter Control

The **Date/Time** filter control, shown in Figure 39, is used to filter results based on criteria in the Date/Time column.

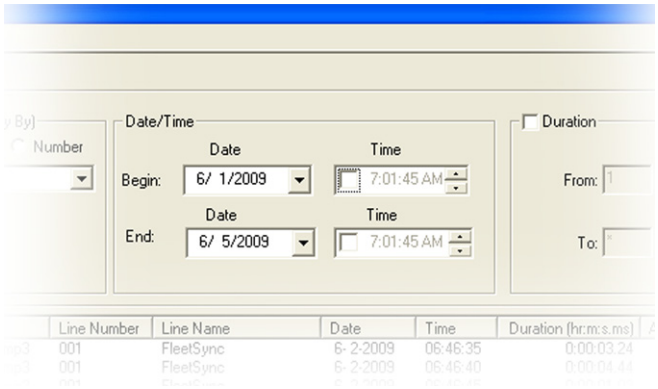


FIGURE 39. Date/Time Filter Control

Begin Date Drop Down Menu

The **Begin Date** drop down is used to select the date the query results are filtered. The query results are filtered by the time entered in the Begin (time) spin box.

Begin Time Spin Box

The **Begin Time** spin box is used to select a beginning time for the date selected in the Begin Date drop down menu.

NOTE: This spin box uses a 12-hour clock.

End Date Drop Down Menu

The **End Date** drop down menu is used to select an end date for the displayed results.

End Time Spin Box

The **End Time** spin box indicates the query results are filtered by the time entered.

NOTE: This spin box uses a 12-hour clock.

To **filter the list of records by date**, do the following:

1. Clear the **Begin Time** check box.
2. Clear the **End Time** check box.
3. From the Begin Date drop down menu, select a **begin date** to filter records.
4. From the End Date drop down menu, select an **end date** to filter records.
   The list of records displays records based on dates entered.

To **filter the list of records by date and time**, do the following:

1. From the Begin Date drop down menu, select a **begin date** to filter records.
2. From the End Date drop down menu, select an **end date** to filter records.
3. Select the Begin Time check box, to indicate the **begin time** used to filter records.
4. From the Begin Time combo box, select a **begin time** to filter records.
5. Select the End Time check box, to indicate the **end time** used to filter records.
6. From the End Date drop down menu, select an **end time** to filter records.

Duration Filter Control

The **Duration** filter control is used to filter results based on criteria in the Duration column. Duration is the length of time the recording should last.

NOTE: The following events are timed to log at 20ms duration. You can use the duration setting to exclude these events from showing up in the search results.

- Line number changes
- Supervisor
- Monitor

Duration Check Box

The **Duration** check box indicates the results are filtered based on criteria entered in the fields.

From Seconds Field

The **From Seconds** field indicates the results are filtered based on criteria entered in the From field.

NOTE: The minimum for this field is more than or equal to one (1) second.

To Seconds Field

The **To Seconds** field indicates the results are filtered based on criteria entered in the To field.

NOTE: An asterisks (*) can be entered in the To field to denote any call greater than or equal to the duration in the From field.

To **filter the list of records based on total duration**, do the following:

1. In the From Seconds field, enter a **duration**, in seconds.
2. In the To Seconds field, enter a **duration**, in seconds.

To **filter the list of records based on duration equal to or greater than a given amount**, do the following:

1. In the From Seconds field, enter a **duration** equal to or greater than one (1) second.
2. In the To Seconds field, enter an **asterisk (*)** to set the criteria to greater than or equal to the duration entered in the From Seconds field.

Search Button

The **Search** button is used to execute a query using criteria specified in the Search Parameters group box.

To **execute a query**, do the following:

1. In the Search Parameters group box, enter **criteria** for the search using filter controls.
2. Click **Search**.
   Results, based on selected criteria, appear in the list of records.

List of Records

The **List of Records**, shown in Figure 40, displays records contained in the Network Recorder's database, once a query is completed. Each row represents one (1) record.

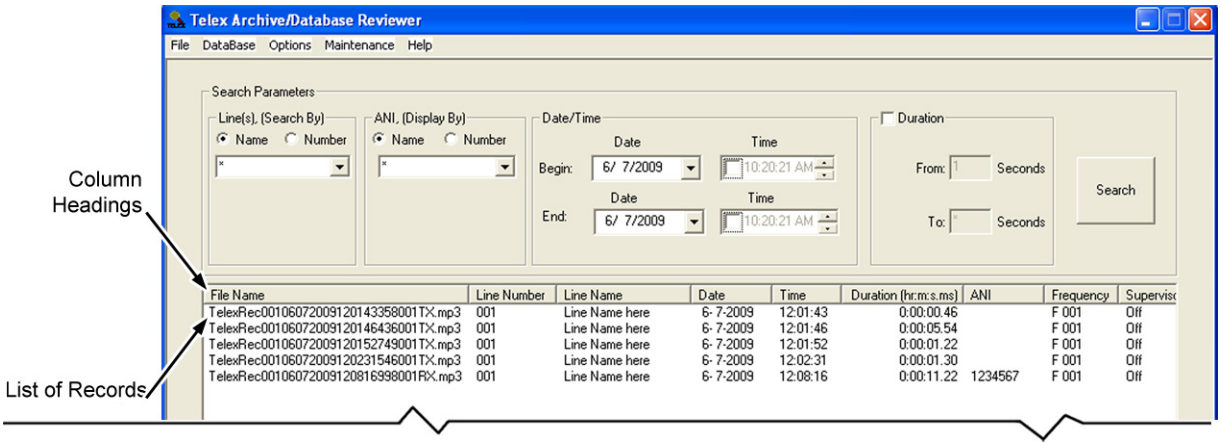


FIGURE 40. Column Headings

The list can contain *up to 1000 records*.

The List of Record's appearance can be customized as follows:

Column Order

Click and drag a **column heading** into place, to change the column order.

NOTE: The Status column cannot be moved.

Column Sorting

Click a **column heading**, to toggle the table's sorting order
If the column heading displays a down arrow, the data is sorted in descending order.
If the column heading displays an up arrow, the data is sorted in ascending order.

Row Selection

To **select multiple records**, do the following:

1. Select the **first record** you want to include.
2. Press the **Shift** key.
3. Select the **last record** in the list you want to include.

To **select multiple non-adjacent records**, do the following:

1. Select a **record** in the list.
2. Press and hold the **Control** key.
3. Select **one** or **more entries** to add to the selection.

Column Headings

The **Column** headings indicate the data type represented in each field.

Column headings are: *File Name, Line Number, Line Name, Date, Time, Duration (hr:m:s.ms), ANI, Frequency, Supervisor, Crosspatch, Scan, NEO, TxIP Address.*

Clear File Button

The **Clear File** button is used to clear selected records from the list of records.

To **clear the unwanted files from the list of records**, do the following:

1. From the List of Records, select the **files**.
2. Click **Clear File(s)**.
   The selected files are removed from the list of records.

Clear List Button

The **Clear List** button is used to clear all records from the list of records.

Select All Button

The **Select All** button is used to select all records in the list of records.

Copy Audio Files Button

The **Copy Audio Files** button is used to copy selected audio files. For more information, see “Files to Copy... Window” on page 58.

Archive Button

The **Archive** button is used to archive files. For more information, see “Archive files Window” on page 61.

Import Archived Files Button

The **Import Archived Files** button is used to import archived files. For more information, see “Import Archive Table Window” on page 76.

Audio Control Panel

The **Audio Control Panel**, shown in Figure 41, is used to control audio file playback.

Select Previous Button

The **Select Previous** button is used to select the previous record in the list.

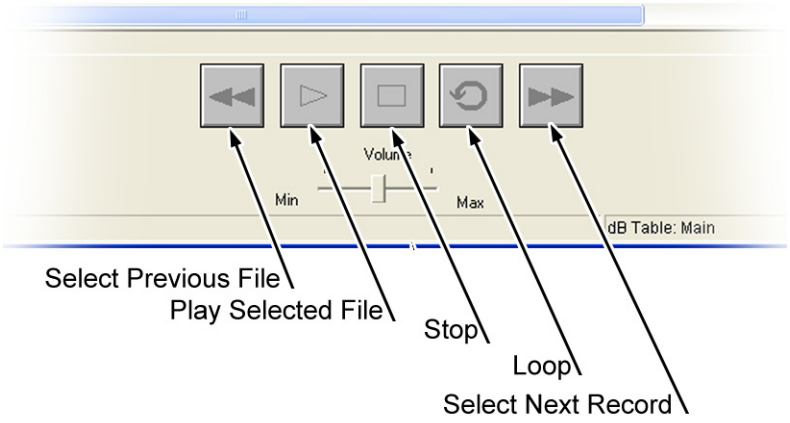


FIGURE 41. Audio Control Panel

Play Selected Files Button

The **Play Selected Files** button is used to play the selected recording.

To **play a file**, do the following:

1. Select the **file name**.
2. Press **Play**.
   OR
   Double-click the **file name**.

   NOTE: The sound file can be put into a continuous loop by clicking the **loop button**.

   NOTE: Multiple files can be chosen by left-clicking the mouse and **dragging a box** around file names to include in the group.The Play button now plays the files one after another.

   NOTE: The CTRL key can also be used to create a specific grouping by holding down the CTRL key and selecting the audio files in the order you wish them to play back.

Stop Button

The **Stop** button is used to stop the selected audio file(s) from playing.

Loop Button

The **Loop** button is used to toggle looping audio.

- If a file is not currently playing and the loop button is clicked, the currently selected files are played and repeated until the stop button is pressed.

Select Next Record Button

The **Select Next Record** button is used to select the next record in the list.

NOTE: This button is disabled during play.

Volume Scroll Bar

The **Volume Scroll Bar**, shown in Figure 42, is used to adjust the computer's speaker volume.

FIGURE 42. Volume Scroll Bar

To **adjust the volume**, do the following:

> Click the **volume scroll box** and move left to lower the volume.
> OR
> Click the **volume scroll box** and move right to raise the volume.

CHAPTER 6

Network Recorder Monitor Operation

Network Recorder Monitor

The Network Recorder software contains self monitoring routines to determine if a problem has occurred within the software. If a problem occurs, a message box appears in the application's main window and the error message is logged in a folder at: *C:\Program Files\Telex Communications\Telex Network Recorder\LogFiles*.

Radio Dispatch's Network Recorder Monitor is an optional application used to capture error messages from a remote installation of Network Recorder. If the Network Recorder connection to the communication system is manually closed or fails, the Network Recorder Monitor provides a notification to the user.

IMPORTANT: Do not install this application on the same computer as the Network Recorder.

NOTE: The Network Recorder Monitor software is used on Network Recorder version 4.010 or later.

Telex Network Recorder Monitor Installation

The **Network Recorder Monitor Installation** files are stored in the Tools folder.

Tools Folder

The **Tools** folder contains a software installation file to run the optional Network Recorder Monitor application. The Network Recorder Monitor should be installed on a PC not running this software.

Available files in this folder are:

- dotnetfx.exe
- WindowsInstaller-KB893803-v2-x86.exe
- Network Recorder Monitor Setup.msi

Microsoft .NET Framework 2.0 Update

To **install Microsoft .NET Framework 2.0**, do the following:

1. From the Tools folder, locate the **dotnetfx.exe** file.
2. Double-click **dotnetfx.exe**.
   The Setup wizard appears.
3. Follow the **prompts**.

   NOTE: Microsoft .NET Framework version 2.0 or later is also available at www.microsoft.com.

Windows Installer 3.1

To **install Windows Installer 3.1**, do the following:

1. From the Tools folder, locate the **WindowsInstaller-KB893803-v2-x86.exe** file.
2. Double-click **WindowsInstaller-KB893803-v2-x86.exe.**
   The Setup wizard appears.
3. Follow the **prompts**.

Network Recorder Monitor Software Installation

To **install Network Recorder Monitor software**, do the following:

1. From the Tools folder, locate the **Network Recorder Monitor Setup.msi** file.
2. Double-click **Network Recorder Monitor Setup.msi**.
   The Telex Network Recorder Monitor window appears.
3. Click **Next**.
   The Select Installation Folder window appears.
4. Select the **Everyone** radio button to allow others to access the Network Monitor.
   OR
   Select the **Just me** radio button to allow only yourself to access the Network Monitor.
5. Click **Next**.
   The Select Installation folder window appears.

   NOTE: To view disk space, click **Disk Cost**.
6. Click **Next**.
   The Installation Complete window appears.
7. Click **Close**.

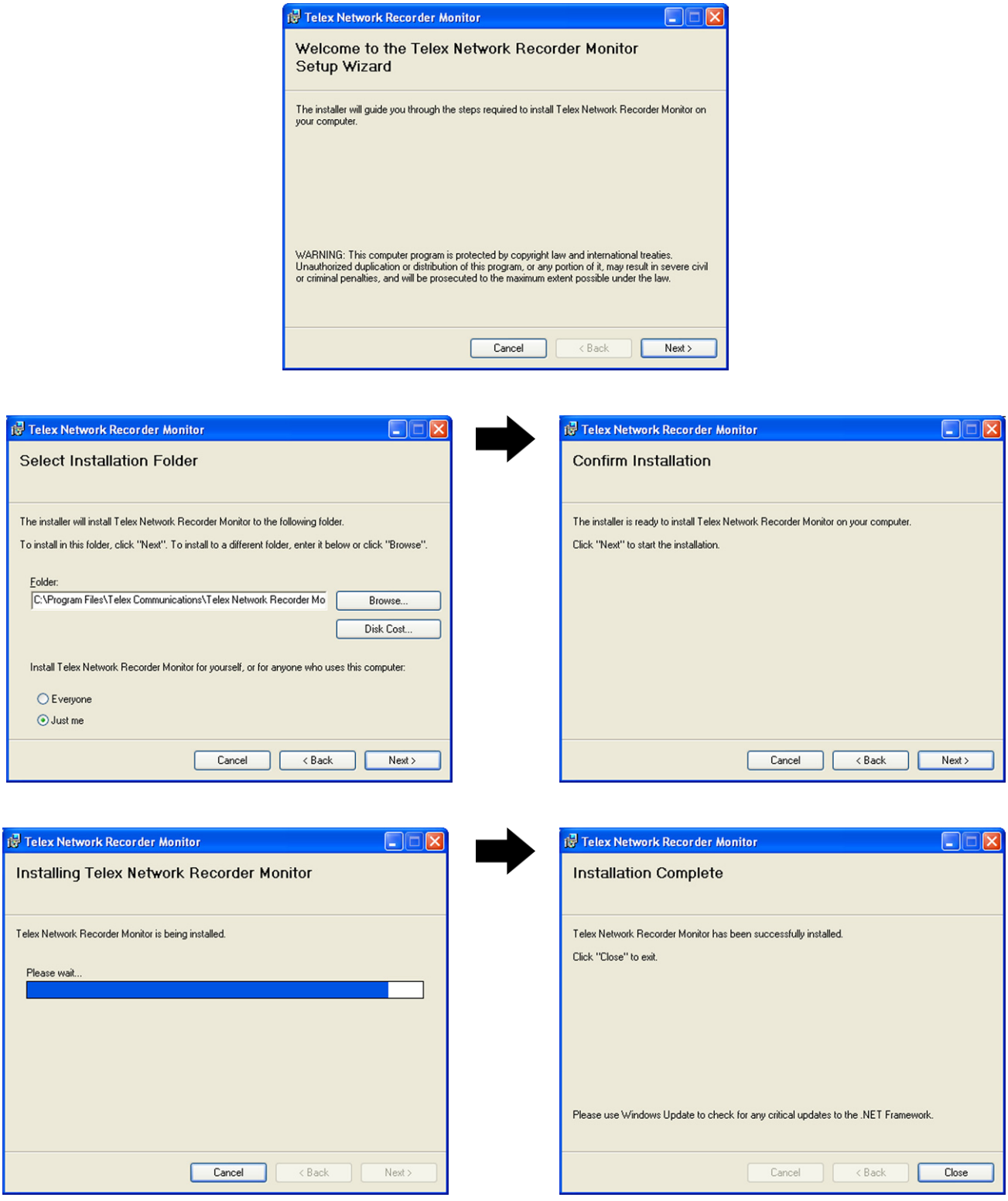


FIGURE 43. Telex Network Recorder Monitor Software Installation Windows

Remote Monitor Setup Window

The **Remote Monitor Setup** window, shown in Figure 44, is accessed from the Network Recorder software. Use this window to enable monitoring, configure the port number, and set up the rate at which the monitor accesses the Network Recorder for current status.

Once remote monitoring is enabled, the Network Recorder is checked for errors at the rate configured in the Remote Monitor Setup window. If a problem occurs, a message window appears in the Network Recorder Monitor's main window and the system tray.

All error messages are logged in a folder at C:\Program Files\Telex Communications\Telex Network Recorder\LogFiles.

NAVIGATION: From the Network Recorder's menu bar, select **Remote Utilites|Monitor Setup**.

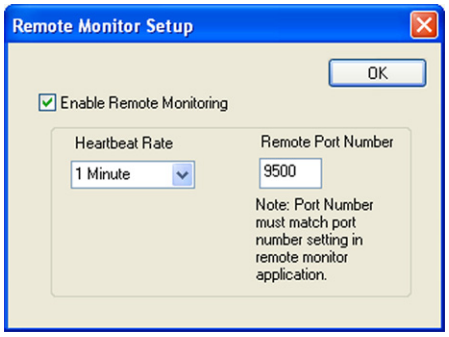


FIGURE 44. Remote Monitor Setup Window

Enable Remote Monitoring Check Box

The **Enable Remote Monitoring** check box is used to enable a remote connection to the Network Recorder that periodically tests the Network Recorder's activity while the application is open.

Heartbeat Rate Drop Down Menu

The **Heartbeat Rate** drop down menu is used to set the interval or rate of heartbeats. This heartbeat is used to detect the Network Recorder's active status.

Available selections for this field are *15 seconds, 1 minute, 10 minutes* or *30 minutes.*

EXAMPLE: If the heartbeat rate is set at one (1) minute and the network connection goes down, the remote monitoring software is notified in approximately one (1) minute. Larger heartbeat rates increase this notification time, however, network traffic is reduced by using a longer heartbeat.

Remote Port Number

The **Remote Port Number** indicates the port used to communicate to the Network Recorder Remote Monitor. This port number must match the port number assigned in the Network Recorder Remote Monitor application "Port Field" on page 100.

Telex Network Recorder Monitor Window

The **Telex Network Recorder Monitor** window is used to configure monitoring parameters and view current history. When the Network Recorder is accessed by the monitoring software, status indications display on the Network Recorder Status page. You can also test Network Recorder connectivity.

To configure a connection to the Network Recorder, see “Remote Monitor Setup Window” on page 94.

To **open the Telex Network Recorder Monitor**, do the following:

1. From the Start menu, select **Programs**.
   The Programs flyout menu appears.
2. Select **Telex Communications**.
   The Telex Communications flyout menu appears.
3. Select **Telex Network Recorder Monitor**.
   The Telex Network Recorder Monitor window appears.

File Menu

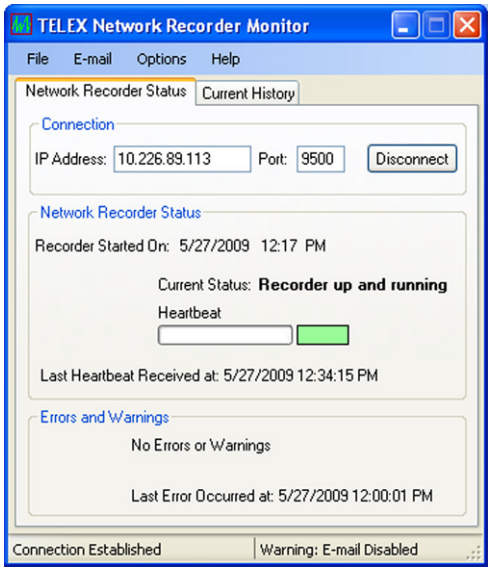
The **File** menu is used to exit the application.

Exit

Once **Exit** is selected, the Network Recorder Monitor closes without warning.

To **exit the Network Recorder Monitor**, do the following:

> From the menu bar, select **File|Exit**.
  Network Recorder Monitor closes.



E-mail Menu

The **E-mail** menu is used to open the E-mail window shown in Figure 45. The e-mail system connects to an SMTP server in order to send mail to a desired e-mail address.

E-Mail Window

The **E-mail** window is used to configure an e-mail account to send updates and alerts and to configure the SMTP server. All fields must be filled before settings can be saved. Then a test of the e-mail system must be made via the Test e-mail button before the system is enabled. E-mails are sent for all messages listed in “Size Information Group Box” on page 75. Additional mail messages are sent when connecting, disconnecting or closing the Network Recorder Monitor application.

Up to 100 accounts can be configured.

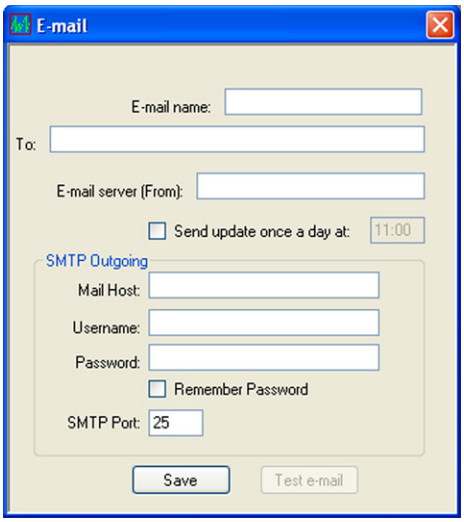


FIGURE 45. E-mail Window

E-mail name Field

The **E-mail name** field is used to enter the source email address that sends e-mail alerts and updates.

To: Field

The **To** field is used to enter the destination e-mail address to send alerts and updates.

Up to 100 accounts can be configured.

E-mail server (From) Field

The **E-mail server (From)** field is used to enter the SMTP server.

Send update once a day at: Check Box

The **Send update once a day at:** check box indicates an e-mail is sent each day at the time entered in the Send update once a day at: field.

NOTE: If an error occurs, an error message is sent regardless of this setting.

Send update once a day at: Field

The **Send update once a day at:** field indicates the time to send the e-mail update.

NOTE: The Send update once a day at check box must be selected before this field is active.

SMTP Outgoing Group Box

Mail Host Field

The **Mail Host** field is used to configure the SMTP mail host for outgoing messages.

NOTE: Contact your Network Administrator for configuration details.

Username Field

The **Username** field is used to enter the SMTP server username.

NOTE: Contact your Network Administrator for details.

Password Field

The **Password** field is used to enter the SMTP server password.

NOTE: Contact your Network Administrator for details.

Remember Password Check Box

The **Remember Password** check box indicates the password is automatically entered when the E-mail window is opened.

SMTP Port Field

The **SMTP** (Simple Mail Transfer Protocol) **Port** field is used to enter the port number the SMTP server uses to for outgoing messages.

NOTE: Contact your Network Administrator to verify the appropriate SMTP server port number to use.

The default value is *25*.

Save Button

The **Save** button is used to save changes made to the window.

Test E-mail Button

The **Test E-mail** button is used to verify the connection and configuration by sending a test e-mail to the e-mail address in the To field. A test of the e-mail system is required before the system is enabled.

To **test (enable) the e-mail system**, do the following:

1. Ensure the **information** in the fields is correct.
2. Click **Test E-mail**.
   An e-mail is sent to the address in the To field.

Options Menu

The **Options** menu is used to open the Options window, shown in Figure 46. The Options window contains an option to manually test the Network Recorder's heartbeat, configure notification, and configure an automatic connection when the Network Recorder Monitor is booted.

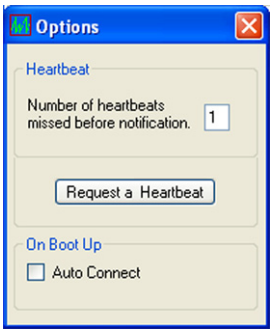


FIGURE 46. Options Window

Heartbeat Group Box

Number of heartbeats missed before notification Field

The **Number of heartbeats missed before notification** field indicates how many heartbeats are missed before an error alert is sent. This setting is normally set to 1; however, if the network is slow, you may want to increase this number to prevent false reporting.

NOTE: Heartbeat rate is configured by the user with Network Recorder, see "Heartbeat Rate Drop Down Menu" on page 94, for details.

Request a Heartbeat Button

The **Request a Heartbeat** button is used to test the connection by manually causing a heartbeat to be sent from the Network Recorder.

On Boot Up Group Box

Auto Connect Check Box

The **Auto Connect** check box indicates the Network Recorder Monitor automatically attempts to connect to the Network Recorder each time the Network Recorder is opened.

Help Menu

The **Help** menu is used to open the About Telex Network Recorder Monitor window to view version and contact information.

OK Button

The **OK** button is used to close the window.

Network Recorder Status Page. The Network Recorder Status page, shown in Figure 47, is used to configure an IP Address and Port number and to view status indications, errors and warnings. You can also manually test a connection to the Network Recorder.

Connection Group Box

The **Connection** group box is used to configure the IP Address and port number the Network Recorder is using to communicate with the monitoring software.

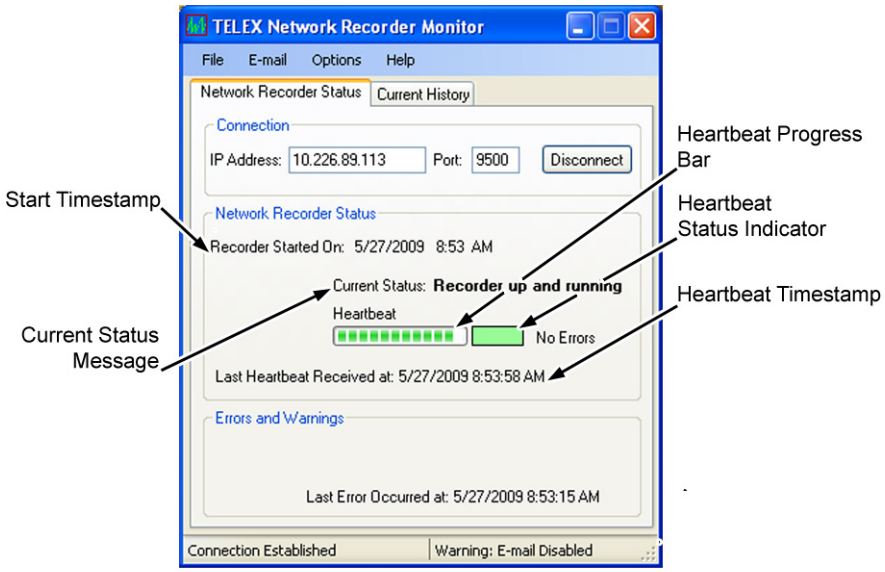


FIGURE 47. Network Recorder Status Page

IP Address Field

The **IP Address** field is used to enter the static IP Address of the Network Recorder's computer. For more information, see "Remote Monitor Setup Window" on page 94.

Port Field

The **Port** field is used to enter the port number to communicate with Network Recorder. This port number must match the Network Recorder's remote port number. For more information, see "Remote Port Number" on page 94.

Connect/Disconnect Button

The **Connect** button is used to connect or disconnect the Network Recorder Monitor's connection to the Network Recorder.

- The **Connect** button indicates a connection to the Network Recorder is not established
- The **Disconnect** button indicates a connection to the Network Recorder is established. The Network Recorder Monitor software is automatically monitoring the Network Recorder connection. The frequency with which the monitor software automatically tests the connection is configured in "Heartbeat Rate Drop Down Menu" on page 94.

To **establish a connection to the Network Recorder**, do the following:

> Click **Connect**.
The Network Recorder Monitor attempts to connect to the Network Recorder. A success, error, or warning appears in the window. If the connection is successful, the button changes to a Disconnect button.

To **disconnect from the Network Recorder**, do the following:

> Click **Disconnect**.
The Network Recorder Monitor is no longer connected to the Network Recorder.

Network Recorder Status Group Box

Start Timestamp

The **Start Timestamp** indicates the date and time the Network Recorder Monitor started.

Current Status Message

The **Current Status** message indicates current condition as of the time given in the Heartbeat Timestamp field. Errors, warnings, and success messages display here.

Heartbeat Progress Bar

The **Heartbeat** progress bar, when pulsing, indicates a heartbeat is sent to the Network Recorder.

Heartbeat Status Indicator

The **Heartbeat Status Indicator** pulses when a heartbeat is being received from the Network Recorder. Once the progress bar is solid green, yellow or red, it indicates the status of the Network Recorder connection.

There are three (3) color possibilities:

Green - The Network Recorder is up and running.

Yellow - The Network Recorder is not open.

Red - The Network Recorder connection has failed.

Heartbeat Timestamp

The **Heartbeat Timestamp** indicates the last time a connection to the Network Recorder was tested.

Errors and Warnings Group Box

The **Errors and Warnings** group box displays Network Recorder connection error and warning messages.

Error Message

An **Error Message** appears when a connection to the Network Recorder fails. The Error message also appears on the Current History page and remains in the list until the Network Recorder monitor is closed.

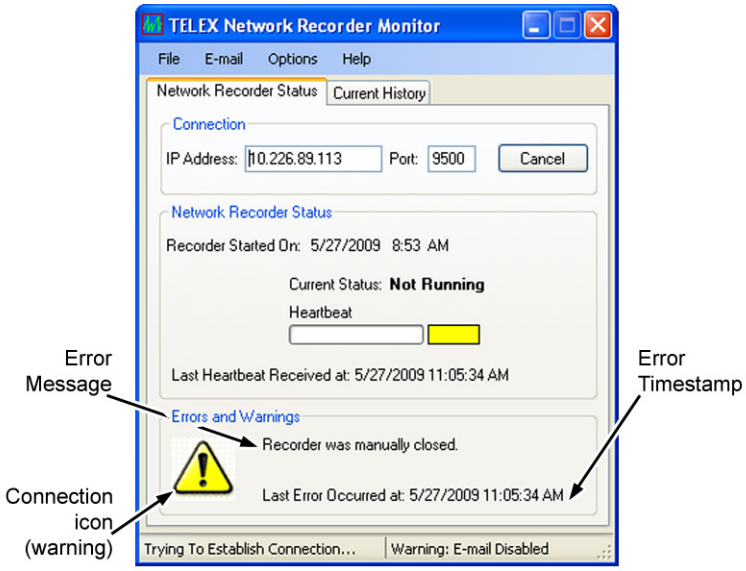


FIGURE 48. Connection Error

Connection Icon

A **Connection Icon** appears in the group box when a connection cannot be established. Otherwise, the Network Recorder is up and running.

Error Timestamp

The **Error Timestamp** indicates the time the last error occurred. Error timestamps, for the current session, are logged on the Current History page.

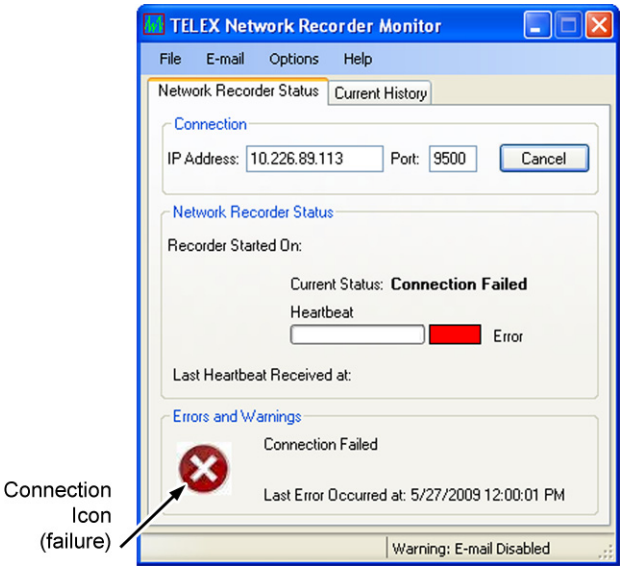


FIGURE 49. Connection Failure

System Tray Status Indicator

The **System Tray Status Indicator**, shown in Figure 50, gives the user a quick method to check the Network Recorder's connection status. When a warning message is sent from the recorder, the indicator changes depending on the type of warning.

There are three (3) status indicator possibilities:

Green - Indicates the Network Recorder is up and running with no errors.

Yellow - Indicates the Network Recorder is not running because it was manually closed.

Red - Indicates the Network Recorder connection has failed.

FIGURE 50. System Tray Indicator

Current History Page. The Current History page, shown in Figure 51, is used to log connection history for the current Network Recorder Monitor session.

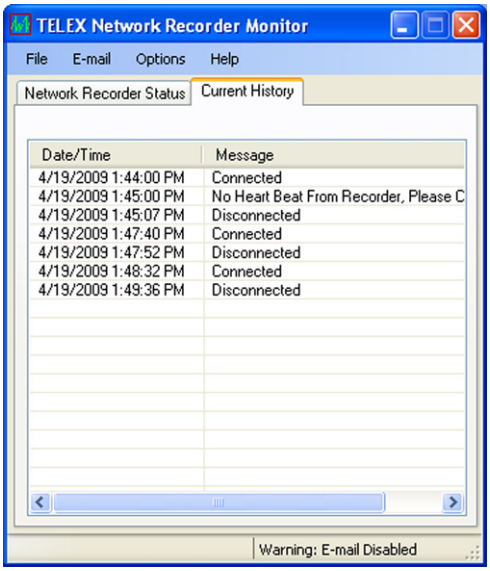


FIGURE 51. Current History Page

Date/Time Column

The **Date/Time** column displays the date and time the Network Recorder Monitor attempted to connect to the Network Recorder.

Message Column

The **Message** column displays the success, error or warning message received when attempting to connect.

Telex Network Recorder Monitor Status Bar

The **Telex Network Recorder Monitor** status bar, shown in Figure 52, indicates the Network Recorder's current status.

Connection Status Message

The **Connection Status Message** indicates whether or not the TCP connection is established. Each time the Network Recorder Monitor software attempts to establish a connection to the Network Recorder a message appears here.

There are 11 status message possibilities:

Established
.mp3 Compression problems
Database connect/reconnect problems
Protect key (dongle[a]) not found.
Sound card problems
Hard drive full
Database is rebuilding
A line has been recording for over half an hour
Accumulation of error files
Less than 20GB left on hard drive
Recorder has closed

a. Telex is not responsible for lost hardware security keys (*also known as a dongle*)

E-mail Status Message

The **E-mail Status Message** indicates if the e-mail account is enabled or disabled. A status message appears when the e-mail is being sent or if the e-mail cannot be sent.

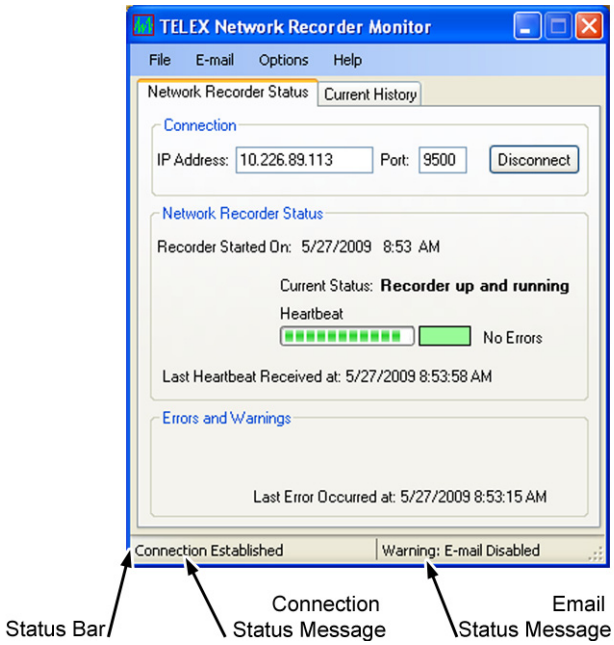


FIGURE 52. Telex Network Recorder Monitor Status Bar

Appendix A

Log and Data Files

Log File Information

If any errors occur during the operation of the Network Recorder they are logged at C:\Program Files\Telex Communications\Telex Network Recorder\LogFiles.

The following text files will be generated if an error occurs:

Compression_Log - This log file is generated if an error occurs in the .mp3 compression routine.

Database_Log - This log file is generated if the Database encounters problems.

Line_Log - This log file is generated if there are problems with a multicast line.

Socket_Log - If a socket is in use by another application and the socket is not shared by that application, this log indicates which multicast line (address and port) in the "Line IP" setup dialog that is having a conflict with another application on this PC.

SoundCard_Log - This log file is generated if an error occurs with the sound card.

NOTE: If a problem occurs, Bosch Customer Support may ask for these files to aid in diagnostics (See "Contact Information" on page 2).

The following text files are purely informational and are always generated:

OpenClosed_Log - Logs the date/time when the recorder has been opened or closed.

Data File Information:

A Data Files folder is located at C:\Program Files\Telex Communications\Telex Network Recorder\Data Files.

recordIP.telex - This file holds information associated to the Line IP setup window (i.e., Multicast Address, Line Type, Line Names, etc.). This file is always generated and is loaded on program boot up.

db_Insert_Data.txt - This file may be generated if the database connection is lost or temporarily interrupted. The file is used as a temporary database until the connection to the main database is established. This file is loaded on program boot up (program must be restarted to load file). A back up of this file is generated by tagging the original file name with the date and time (i.e., db_Insert_Data_X_XX_XXXX_XX_XX_X.txt).

APPENDIX B

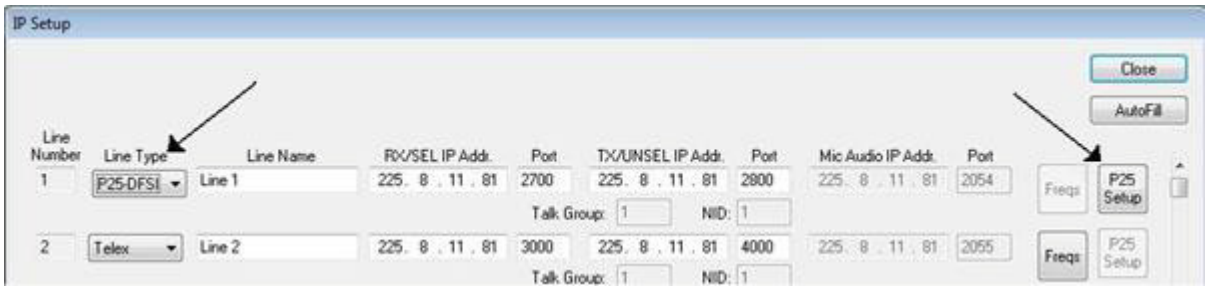
P25 DFSI

To record P25 traffic, the Network Recorder does not connect directly to a P25 repeater. Instead, it connects to a C-Soft server console that passes the unaltered P25 voice conveyance payload to the recorder. A C-Soft console must be setup as a DFSI Server console, with the Network Recorder connected to the server as a client.

The server console passes the voice traffic to the recorder client using the multicast addressing, as defined in the C-Soft Server setup. The recorder then decodes the voice payload using an IMBE CODEC.

To **configure a P25 DFSI line**, do the following:

1. From the Setup menu, select **IP Setup**.
   The IP Setup window appears.



2. From the Line Type drop down menu, select **P25-DFSI**.
3. Click the **P25 Setup** button.
   The P25 Setup window appears.

P25 Setup Window

The **P25 Setup** window, shown in Figure 53, is used to connect to and receive voice from the server console.

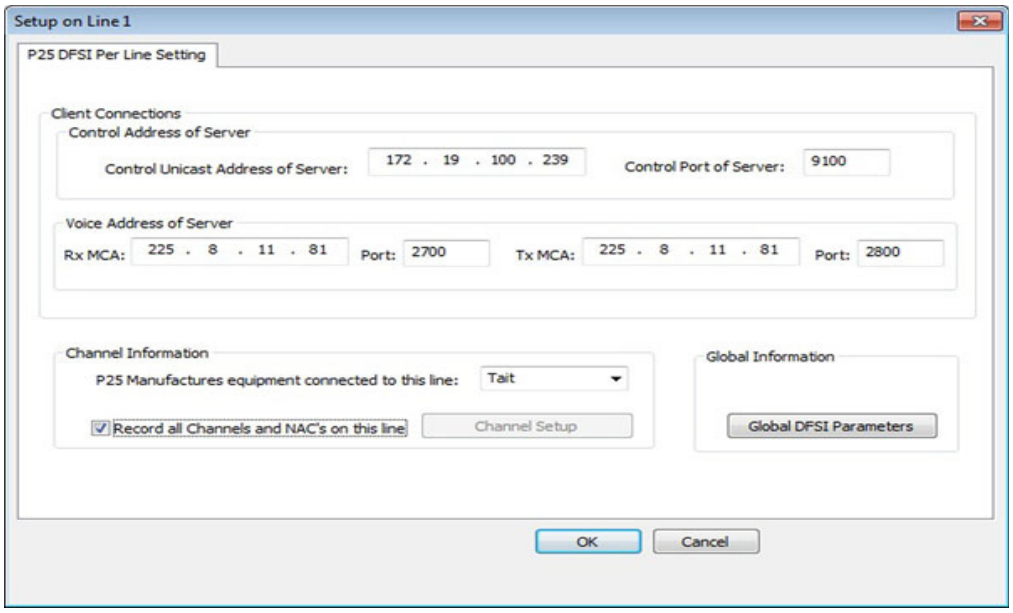


FIGURE 53. P25 Setup Window

Client Connections

Control Address of Server Group Box

The **Control Address of Server** group box is used to send/receive control messages to/from the server; such as Connect, Heartbeat, etc.

Control Unicast Address of Server Field

The **Control Unicast Address of Server** field is used to enter the static IP address of the PC running the C-Soft Server console.

Control Port of Server Field

The **Control Port of Server** field is used to enter the per line port number of the server console.

Voice Address of Server Group Box

All P25 voice traffic is transmitted and received on these address. Enter the Multicast address and ports associated to this line as defined by the server console.

Rx MCA Field

The **Rx MCA** field is used to enter the receive Multicast Address for the server

Port Field

The **Port** field is used to enter the port address for the receive audio.

Tx MCA Field

The **Tx MCA** field is used to enter the transmit Multicast Address for the server

Port Field

The **Port** field is used to enter the port address for the transmitted audio.

Channel Information Group Box

P25 Manufactures Equipment Connected to This Line Drop Down Menu

The **P25 Manufactures Equipment Connected to this Line** drop down menu is used to select the P25 manufacture name.

Record All Channels And NAC's on this Line Check Box

The **Record All Channels and NAC's on this Line** check box enables or disables the Channel Setup button.

- If the box is selected, all channels are recorded.
- If the box is not selected, the user can select individual channels to record via the channel table window.

Channel Setup Button

The **Channel Setup** button opens the Channel Table window (see Figure 54).

Global Information Group Box

Global DFSI Parameters Button

The **Global DFSI Parameters** button opens the DFSI global settings window (see Figure 55).

NOTE: The fields in this window apply to all P25-DFSI line types.

Channel Table Window

The **Channel Table** window, shown in Figure 54, allows the user to add/delete channels, change the change label and edit the Rx-NAC for this line. Up to 100 channels can be added to this table.

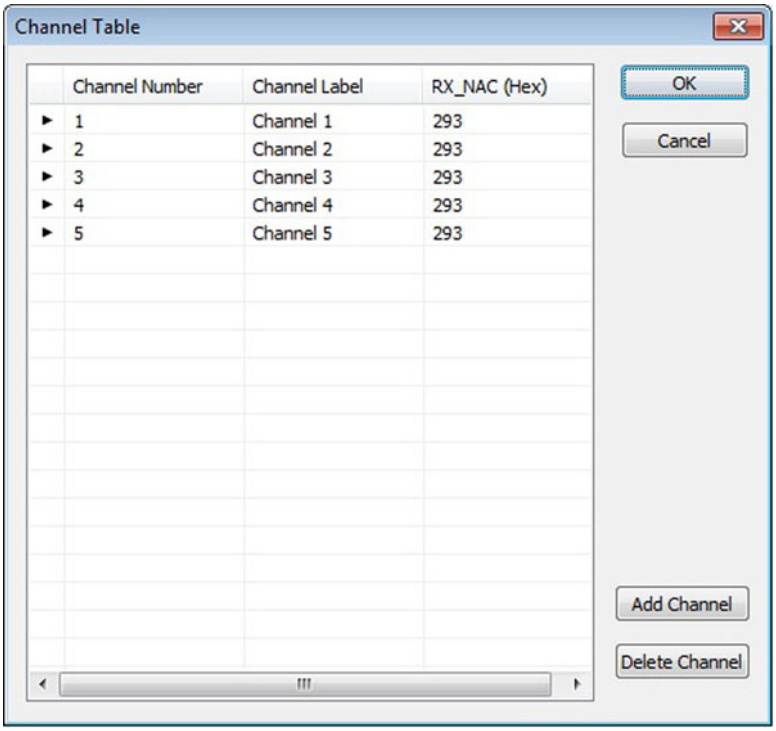


FIGURE 54. Channel Table

Channel Number Column

The **Channel Number** column displays the channel number for the line.

Channel Label Column

The **Channel Label** column displays the channel label assigned to the line.

RX_NAC (Hex) Column

The **RX_NAC (Hex)** column displays a three (3) digit identifier (in Hex). This number must match the radio-sent number, or the call is not picked up by the Network Recorder.

OK Button

The **OK** button accepts the changes made and closes the window.

Cancel Button

The **Cancel** button rejects the changes made and closes the window.

Add Channel Button

The **Add Channel** button adds a new channel to the Channel Table.

Delete Channel Button

The **Delete** Channel button deletes the selected channel.

DFSI Global Settings Window

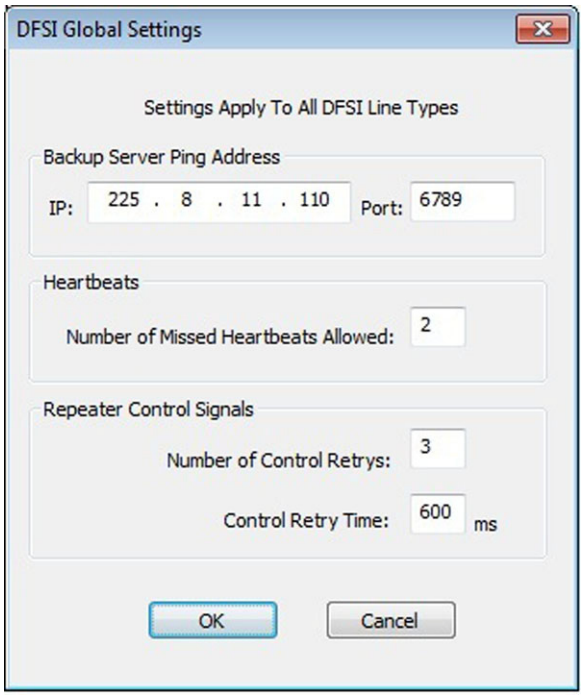


FIGURE 55. DFSI Global Settings

Backup Server Ping Address Group Box

IP Field

The **IP** field is used to enter the Multicast Address of the backup server.

Port Field

The **Port** field is used to enter the port number assigned in the server console.

Heartbeats Group Box

Number of Missed Heartbeats Allowed Field

The **Number of Missed Heartbeats Allowed** field indicates the number of missed heartbeats that the recorder allows before disconnecting from the server. When the recorder connects to the server, the server passes the heartbeat rate to the recorder and sequential heartbeats at this rate. If the recorder misses X numbers of heartbeats the recorder disconnects from the server and tries to reconnect indefinitely.

The range for this field is *0* to *5*.

Repeater Control Signals

Number of Control Retrys Field

The **Number of Control Retrys** field indicates the number of sequential connect or disconnect messages sent to the server.

The range for this field is *0* to *5*.

Control Retry Time Field

The **Control Retry Time** field indicates the time spacing, in ms, between sequential messages.

The range for this field is *500ms* to *1000ms*.

OK Button

The **OK** button accepts the modifications and closes the window.

Cancel Button

The **Cancel** button rejects the modifications and closes the window.

Troubleshooting

To **determine if the Network Recorder is connected to the server console**, do the following:

If line 1 is a P25-DFSI line type and the recorder has connected successfully to the server, the line name should appear on the monitor button, as shown below.

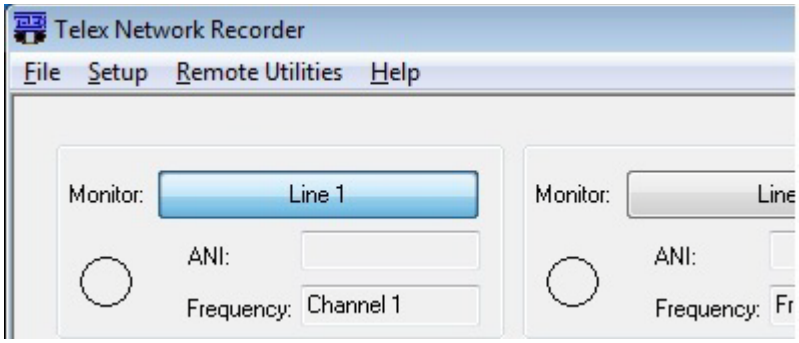


FIGURE 56. Connection Successful

If the line did not connect to the server, the monitor button will flash “Attempting Connection” and “Connection Failed “on each retry attempt, as shown below.

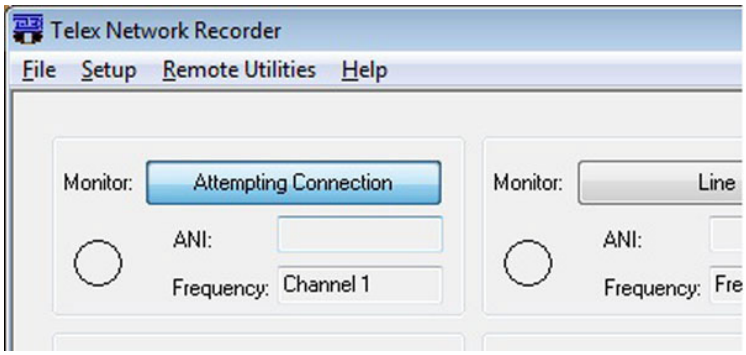


FIGURE 57. Attempting Connection

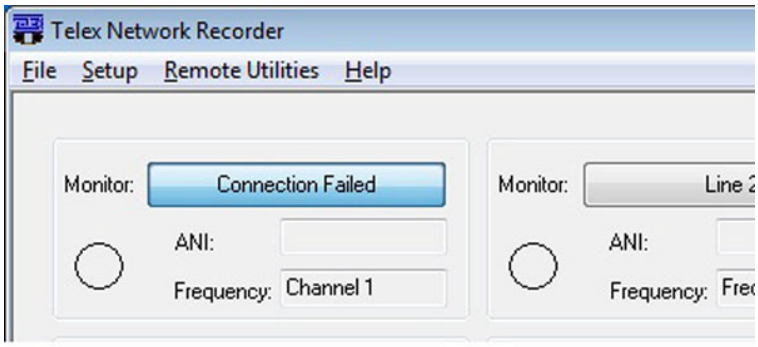


FIGURE 58. Connection Failed

Bosch Security Systems, Inc.
12000 Portland Avenue South
Burnsville, MN 55337 U.S.A.
www.boschcommunications.com