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# Singars/Falcon Audio Recorder

*VOX Operated Military Radio Logger*



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## USER'S GUIDE

## **Sincgars / Falcon Recorder Features**

The recorder provides a USB streaming audio interface to standard military radios including Sincgars and Falcon. Standard features are:

### ***U-183/U-229 Military Audio Interface***

Connects to Motorola, Harris, General Dynamics, or other military radios with a standard 5 or 6 pin U-229 connector.

### ***Standard Windows HID CODECs***

The default recording format supported using included software is the 8KHz 64Kbit/sec u-law G.711 telecom standard. Since standard Windows HID compatible CODECs are used, third party software such as Sony Sound Forge or Adobe Cool Edit can be used to make stereo recordings of transmit and receive channels at any standard audio rate up to 48kHz, 16bit stereo.

### ***Dual Internal CODECs, software mixer***

Dual A/D converters record both transmit and receive audio separately. Audio can be mixed into a single monaural recording file with the balance adjusted in software.

### ***VOX Operation***

Recording is automatic. Logs are displayed at a glance. A sound-operated VOX system with adjustable trigger level and timeout places each call in a separate file. Related calls occurring within a selectable period are grouped into a single file.



### ***Instant Replay, Remote Access***

Calls can be replayed instantly, even while recording. Find calls quickly. Play calls on any Windows PC. Recordings can be copied, emailed, encrypted, and backed up. No proprietary software is required.

### ***Hard Disk or Network Storage***

Select a local hard drive or a network file server to save recordings. Use a shared directory for easy access over a network.

### ***Call Analysis Software***

Call analysis software indexes and sorts call files for easy retrieval. DTMF decoding is provided.

## **Package Contents**

- 1. SINGGARS / FALCON recorder audio module**  
This module converts radio audio into a USB audio stream.
- 2. USB Cable – IP69 to USB-“A”**  
Use this cable between the logger and PC USB 1.1 or 2.0 port.
- 3. Software installation CD**  
Insert the CD in your Windows XP, Vista, or 2000 PC to start the software installation. The main logging application and two utility programs are provided.



## System Requirements

### *Operating System*

Windows Vista, 2008, XP, 2003, 2000, ME, 98SE, NT4.0 or later. W7 or W8 Upgrading to the latest version of Direct-X from [www.microsoft.com/directx](http://www.microsoft.com/directx) is recommended.

### *Processor*

1GHz P-4 or faster with CD drive. 2GB recommended.

## Quick Setup

Use these shortcuts for quick installation. If you're unfamiliar with logging systems, please read the entire manual before proceeding.

1. Connect the logger to a radio using the appropriate U-229 cable. The connection "loops through" the logger, so the logger should be connected between the radio and the handset or speaker.
2. Install the software CD by placing it in your drive. Install the application and both utilities.
3. Adjust the Voice Activation timeout, Tx/Rx mixer, and VOX level to appropriate values. The default timeout for radio calls is 20 seconds.
4. The logger automatically separates calls into files with time stamps.
5. Recordings may be replayed live by opening the **Instant Replay Window**, by clicking on the audio files, or by using the **Real Time Player** application.

## Connecting the Radio

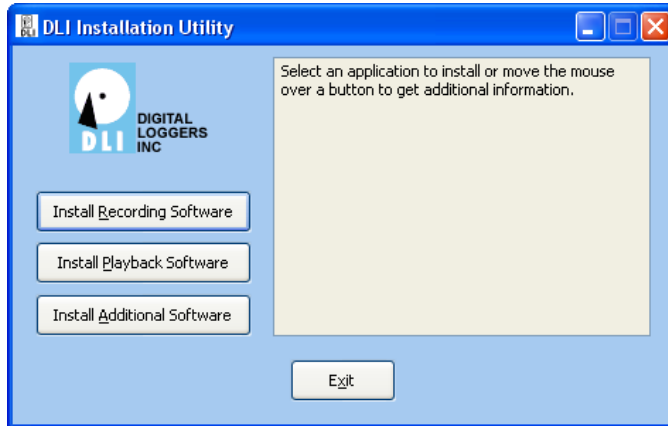
A straight-through jumper cable is used to connect the logger to the radio as shown below. The secondary audio jack may be connected to the logger only when microphone (transmit) audio is provided on this connector. Other audio sources, such as telephone lines or speakers can also be connected to pins B and D of the logger U-229 connector.





## Software Installation

Insert the CD. A multi-installer will appear:



SINGGARS Logger is the main recording and playback application used on the host PC. Installing this one program is all that is necessary in many applications.

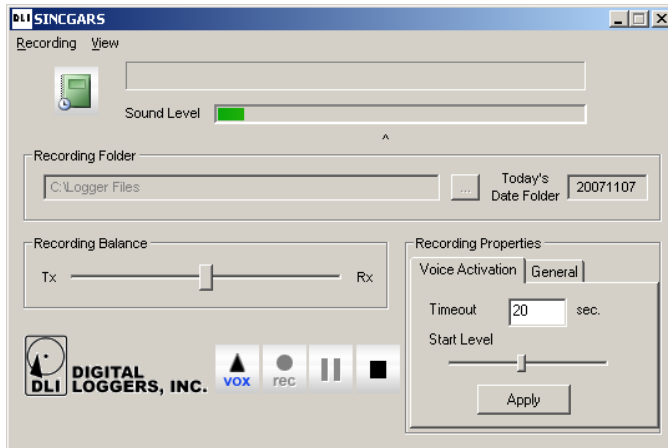
If you are operating in a networked environment, RealTime Player is a remote access utility which will stream recorded audio with minimum latency over a high speed LAN or WAN connection.

Under "Install Playback Software, you will find Evidence Builder and Call Investigator. Evidence Builder is a cataloging utility which is useful for locating, editing, and transferring recordings. Call Investigator has a simplified user interface with time/date filtering.



Ensure that hard disk space is available for recording. Each second of recording uses 8Kbytes of disk space. Each gigabyte stores 34 hours of recordings.

After installation, restart your PC. Then start the Sincgars Recorder by clicking the “DLI” icon. The main screen appears:



To set up your logger, set your radio volume to a normal output level. Start with the Recording Balance slider centered. The Level Indicator should look like this:



## Adjusting the Sound Activation Level

The recorder is a voice activated ('VOX') application. It listens for sound, records a file, and stops recording after detecting silence.

The sound activation trigger level is adjustable. The small arrowhead under the level meter is the trigger level. Recording starts whenever the sound level moves to the right of the arrowhead. This trigger level can be adjusted using the "sensitivity" slider bar in the lower right corner of the program. With your radio squelched, set this trigger level slightly to the right of the level meter.

Recording continues until a specified period of silence is detected. Adjust this period using the "Timeout" setting in the lower-right corner.

Setting the timeout too short will break a call into several smaller files. Setting it too long will cause concurrent calls to nest in the same file. We suggest starting with a 10-20 second timeout, then adjusting it to your liking.

## Equalizing Transmit/Receive Levels

The SINCARS logger provides two ways of equalizing recording levels. The first is a TX/RX mixer bar on the recording screen.

The recorder can also automatically adjust recordings to approximately the same volume. This process is called "normalizing". To enable this, click ***Normalize Calls*** in the **Preferences** menu.

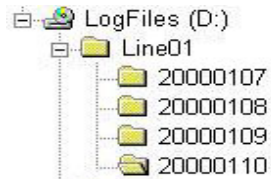


## Storing Recording Files

The recording storage location can be changed. To change it, first click the STOP button. Then click the Browse button to select a directory:

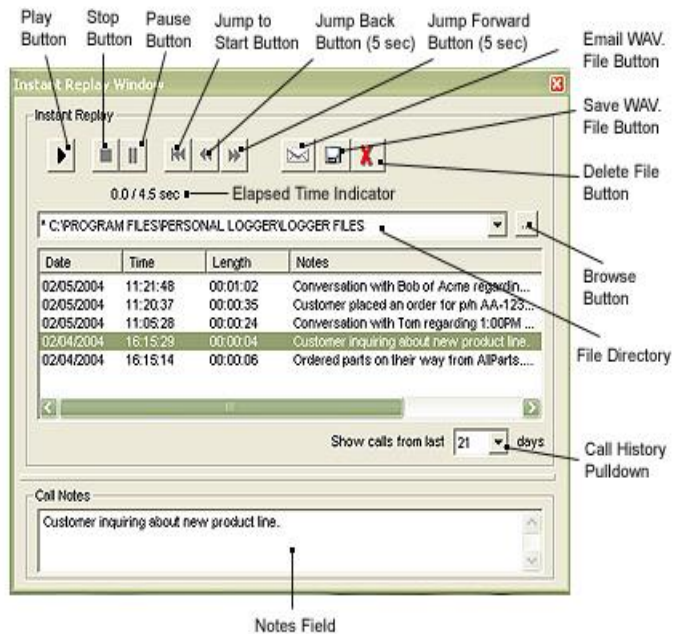






Select a new folder and press **OK**. **Note:** Recordings are grouped in daily folders underneath this:



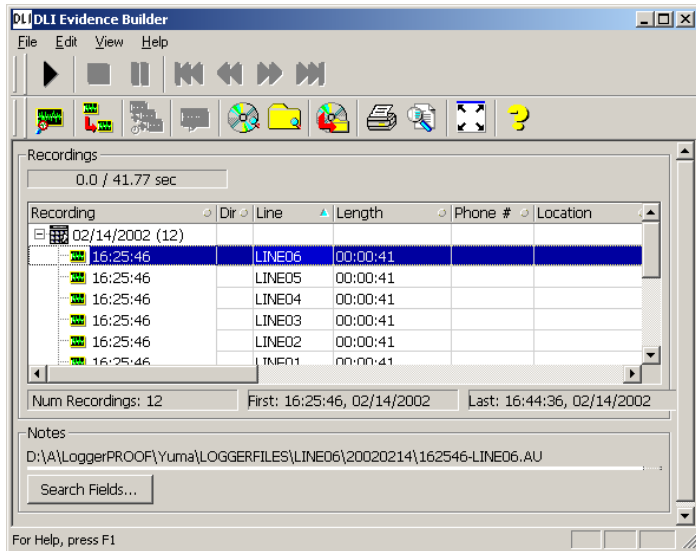
## Instant Replay

Select **Show the Instant Replay Window** from the **View** menu to play calls. Select a call first, then use the buttons to control play, email, and export files.



	<b>Delete a call</b>
	<b>Email a call</b>
	<b>Go back 5 seconds</b>
	<b>Export a call</b>

## Call Analysis Software



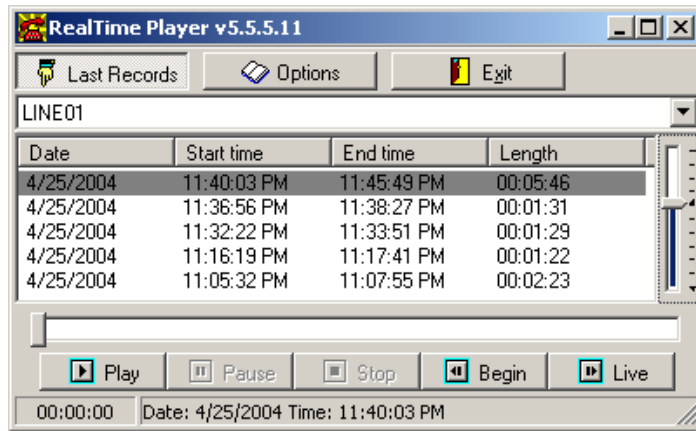
Evidence Builder is a program used to locate and analyze recordings. Load it on a workstation and point it at recording directories to analyze incoming calls, create call lists, and sort calls. Recordings which contain DTMF signaling in the audio can be searched by number. Other recordings may be searched by channel, time, and date.

To catalog files on a remote server, first create a path to the shared recording directory. Be sure to use proper security. Map this to a drive letter on your workstation.



Next, choose the “Catalog Files From Hard Drive” button and select the recording directory. The screen display can be customized by in the “preferences” menu.

## Live Remote Monitoring



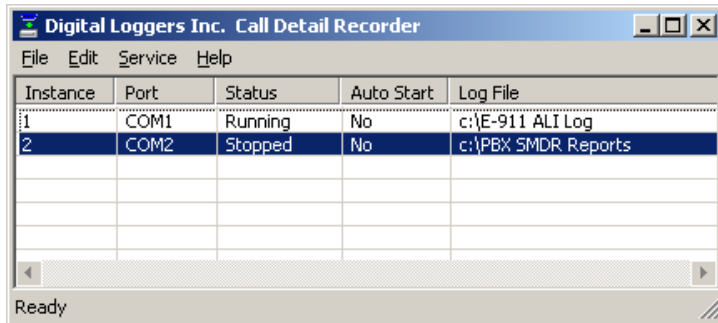
Remote users with access privileges to the recording server may monitor calls in real time via LAN or WAN connections.

A Real Time Player application is provided on the CD. It's downloadable at: [www.digital-loggers.com/rtp.exe](http://www.digital-loggers.com/rtp.exe)

To remotely monitor calls, load the Real Time Player application on a workstation. Click on “options”. Use the browse button to select a source directory with archived or incoming calls. Live calls are highlighted in red. Select a call and press “play”, or press “live” to continuously monitor calls. Windows security may be used to selectively control access to specific lines.



## Serial Data Stream Logger



RS-232 data streams or other serial data related to recordings may be logged using a separate application. This is useful for low data rate telemetry, radar data, ANI, ALI, or SMDR data streams. This utility logs up to 8 RS-232 serial ports simultaneously. The output files are time and date stamped.

Download the latest version from:

[www.digital-loggers.com/cdr.exe](http://www.digital-loggers.com/cdr.exe)

## Self-Help

### ***Recording Doesn't Start Automatically***

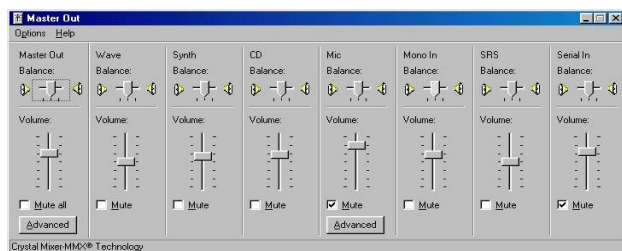
Double check the VOX sound activation settings as described on pages 7-8.

### ***I'm not getting any audio at all.***

First, check your cabling. After you've checked the connections, check to see that the AKM 2307 USB CODEC is enabled and selected for input.

### ***Cables are connected properly, but I don't get any audio or indication on the level meter.***

The most likely cause is that the CODEC level input is turned off. If you haven't used your logger before, it may not be enabled. Use the control panel to enable it. To get to the control panel, double-click on the speaker icon. Then select recording properties for the AKM USB Audio CODEC.



Slide the volume up on the MIC level, and uncheck the "MUTE" box. If your control panel has a "SELECT" box, select only the microphone, and deselect the others.



***I receive a 'Device already in use' error message. How do I solve this?***

You probably may have another program, such as [WinAmp](#) or [Real Player](#) using the microphone or speaker resources. Close the application and re-start recording.



## Limited Five-Year Warranty

The terms of this warranty may be legally binding. If you do not agree to the terms listed below, return the product immediately in its original unopened condition for a full refund. Multiple, redundant logging units are highly recommended for critical applications. PCs should be protected by Uninterruptable Power Supplies for maximum reliability. The software, firmware, and accompanying written materials are provided "AS-IS" without warranty of any kind. The purchaser assumes the entire risk as to the results and performance of the unit. DLI warrants this Sincgars Call Recorder to be free from defects in materials and workmanship for a period of five years from the date of the DLI original invoice. DLI's entire liability and exclusive remedy as to defective hardware shall be, at DLI's option, either (a) return of the purchase price or (b) replacement or repair of the hardware that does not meet DLI's quality control standards and has been returned through proper RMA procedures. DLI's liability for repair or replacement is to DLI's customer ONLY. No warranty service will be provided without an original invoice from DLI and an RMA number provided by technical support. RMA material must be shipped prepaid to DLI. RMA numbers are valid for 15 days from date of issue. This warranty does not cover products modified, subjected to rough handling, or used in applications for which they were not originally intended. No oral advice or verbal warranties made by DLI's employees, dealers, or distributors shall in any way increase the scope of this warranty. DLI makes no warranty as to merchantability or fitness for any particular purpose. Due to the wide range of signal sources available, DLI cannot guarantee compatibility with all system configurations. DLI assumes no liability for incidental or consequential damages arising from the use or inability to use this product. This warranty gives you specific legal rights. You may also have other rights that vary from state to state. Since some states do not allow the exclusion of liability for consequential damages, some of the above limitations may not apply to you. DLI makes no representation as to the legality of recording conversations under any specific circumstances.



2695 Walsh Ave  
Santa Clara, CA 95051

[digital-loggers.com](http://digital-loggers.com)

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