Multi-Channel Audio Logger

User's Guide

Logger Features

- Digitally records up to 8 US military radios, intercoms, or analog phone lines.
- Signatures with the time, date, and recording details are included in audio files.
- Plug and Play USB simplifies installation.
- Long recordings can be automatically split into easily manipulated sections.
- Disk usage can be controlled on a line-by-line basis to conserve disk space.
- Recordings can be searched by time, date, or notes.
- Level settings equalize transmit and receive audio volume.
- Windows utilities produce call lists and recordings rapidly.

Host PC Requirements

- A dedicated PC with a minimum of 4GB RAM is recommended.
- Windows 2003, XP, Server 2008/2010, W7, W8 or later are supported. Windows 9x/ME aren't supported.
- A free USB 3.0 or 2.0 480Mbps port. Slower 11Mbps USB 1.1 ports aren't recommended.
- A dedicated local Solid State drive is highly recommended for call storage. Many NAS, USB, and remote shared drives don't offer the performance required for real-time audio streaming. Using a dedicated flash based SSD drive for call recordings improves performance.
- U-229 audio cables are user-provided.

Quick Installation

1. Run windows update from **windowsupdate.microsoft.com** to ensure you have the latest USB drivers and security patches available from Microsoft.
2. Cable radios and handsets to the logger using U-229 cables. Up to 8 radios or intercoms may be connected.
3. Attach the USB cable to a dedicated PC. Connect directly to a primary 480Mbps USB 2.0 port, not to a hub. Once attached, the USB configuration on this PC should not be changed. Windows will load drivers and the application will need to be restarted if the logger is moved to a different USB port. *Note:* A 480Mbps port is required. Long cables and USB extenders are not recommended.
4. Switch power on to the PC. Don't connect the USB cable quite yet.
5. After boot, insert the distribution CD to start the logging application installation. Administrator permissions will be required.
6. Apply power to the logger. Note the voltage requirement label on the back of the logger.
7. Complete the installation. Reboot and start the logging application.
8. Set the recording mode for each line to VOX mode and make test recordings on each line.
9. Remove the two screws and cover plate over the level adjustments. Rotate the gain controls to adjust the recording levels for each line. After confirming recording quality, replace the cover plate and screws.
10. Set the VOX trigger level on each line for correct recording trigger.

11. Check disk space. If needed, map a network drive to the workstations used for playback. Use Windows security to limit access to authorized individuals.
12. Install accessory software as desired. Load "Call Investigator" or "Evidence Builder" utilities as required on playback workstations. These programs scan recordings and catalog calls by DTMF and Caller-ID.   Install "Real Time Player" for remote monitoring. Install "Call Detail Recorder" if needed to record SMDR, ANI, or ALI from RS-232 sources.

Included Hardware

Supplied hardware includes:

- Qty 1 – 8M-xx USB Capture Unit
- Qty 1 – High Speed USB "A" to USB "B" cable.
- Qty 1 – Power Cord

Power and USB Connections

Power
Verify the input voltage matches the label on the logger. The logger is available in 110/120VAC, 220/240VAC, or 48VDC. Follow the power-up sequence described above in "quick start installation".

USB to PC connection
The USB cable provided has a rectangular host PC "Type A" plug on one end and a round IP rated "Type B" connector on the other. Connect the USB cable between the PC and the logger. Rotate to lock.

Radio / Intercom / Phone Line Connections

Each line can record from:

1. Military radios using loop-through connections.
   Connect a radio to the upper jack, and a handset to the lower jack.
2. Military intercoms using either loop-through wiring to capture both headset and mike audio, or using a speaker jack with a single cable.
3. Analog phone lines, analog extensions or from an analog port on a PBX. Contact the factory for phone cables.

After you've completed wiring, select the VOX recording trigger for each line. Set the recording volume level first, then set the trigger level. Set the VOX trigger threshold to a level slightly above the noise floor (background noise level) of each line.

Label the input by clicking on the line name to the left of the VU meter bar to rename it. For example, "LINE 01" might be renamed to "TAC Radio 1"

VOX Trigger Level and Timeout with Radios

To use VOX mode, first adjust the recording level to avoid clipping as described above. Once the recording level is set correctly, hang up the line and adjust the VOX trigger level about 6-10dB above the noise floor. The VOX trigger level is the threshold at which recording will begin. In other words, when the logger "hears" a sound louder than the VOX trigger level, it will start to record. Recording will continue until silence is detected for a period of time. This period of time is called the VOX timeout. Start with a timeout of 10 seconds for radios. Listen to the recordings, and then adjust the timeout value to your liking. An excessively long timeout setting will combine multiple calls into a single file. An excessively short setting will cause calls to break apart into multiple recording files during periods of silence.

If you change the radio or intercom volume level substantially, you may need to readjust the VOX trigger level in the recording application.

Unused Lines

Logger inputs are sensitive. Unused lines may record noise coupled from adjacent wiring. Set unused lines OFF in the recording application.

Software Setup and Installation

If you haven't updated Windows recently, we recommend a visit to windowsupdate.microsoft.com to obtain the latest USB drivers before installing the software.

After updating, insert the logger installation CD into your CD-ROM drive.

Do not connect the logger USB cable until you have completed installing the software drivers.
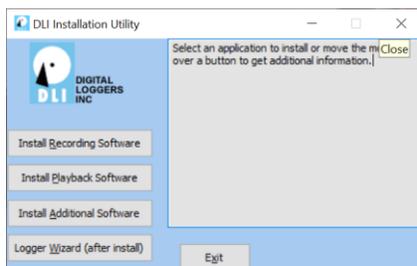
Start by installing the recording software.

- Click "Install Recording Software.
- Click on the photo of the logger and choose "Install Selected".
- Select the installation directory and shortcut name.
- Install Microsoft .NET Framework and security updates if prompted.

The components "MIL-F8 Channel USB Logger" and "Common Files" should be checked.

Uncheck "MIL-VoiceIP"

Click "Next".
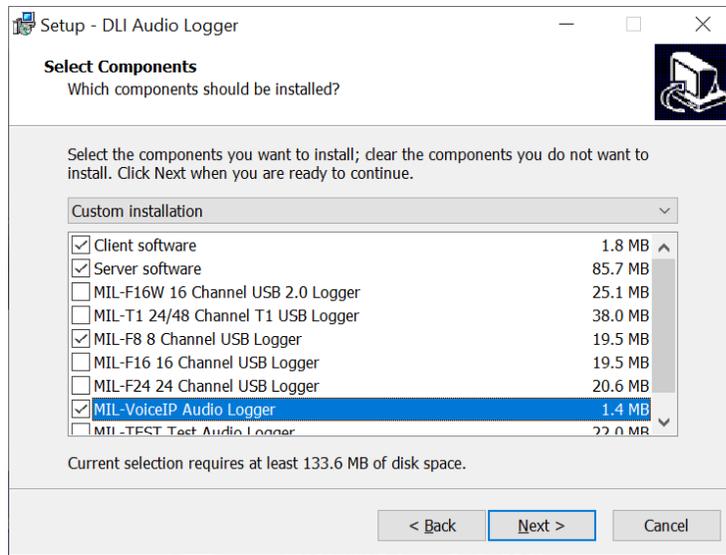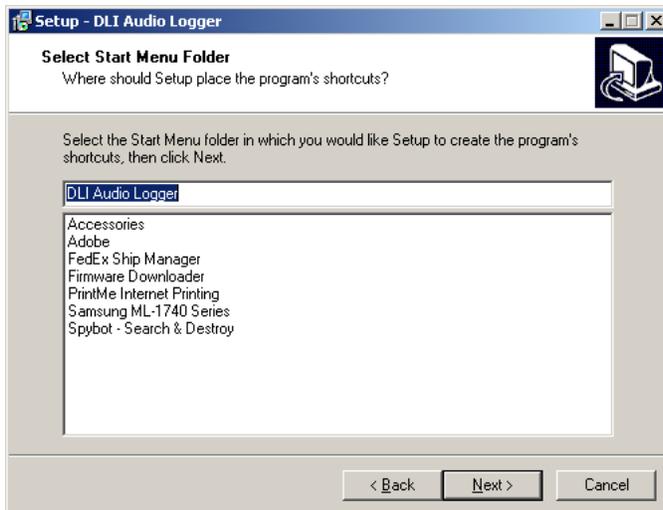
Next, select a folder for the program shortcuts.
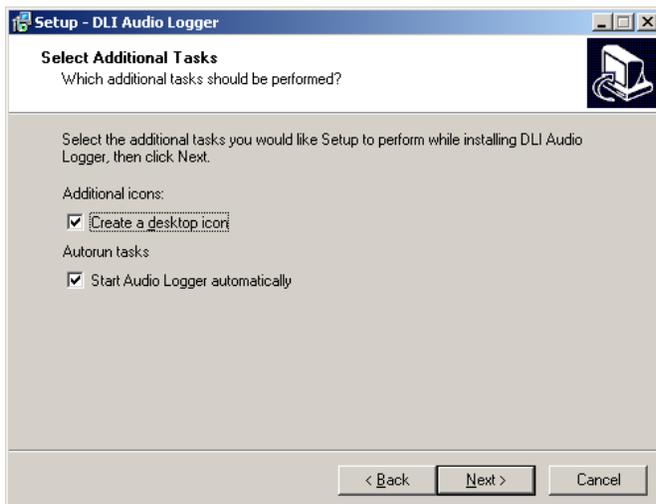
To record automatically after login, check 'Start Logging Automatically".   If a machine is left unattended, this ensures uninterrupted operation in the event of a power failure and subsequent reboot.

Click "Next" and setup will complete automatically. Click "Finish" after completion. Now connect the USB cable and start the setup application.

Channel Configuration – Logger Config Utility
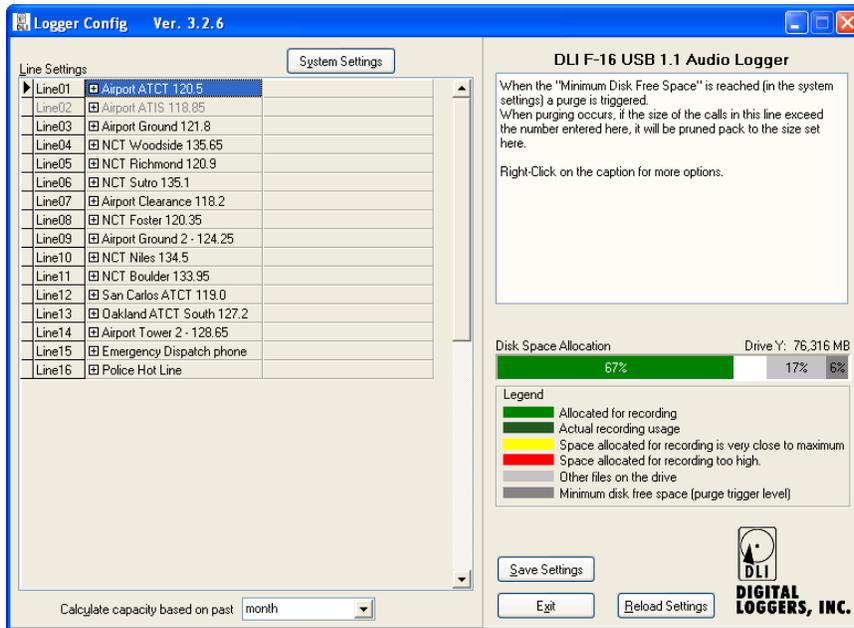
To start the configuration utility, click:

Start / Programs / DLI Audio Logger / DLI Logger Config

Each channel corresponds to one recording directory. Within each channel directory, the logger creates a subdirectory for each day.

To change settings for a particular channel, click the small + symbol to the left of the line name. The settings for that channel are displayed.

The most important settings are:

Record Trigger Mode

Set this to **VOX** for normal operation. Set unused channels **OFF**.

Line Name

Choose "Radio Net 1" or a similar name to identify the radio being recorded. All recordings for this radio will be stored in a folder with a matching name. Since this Line Name will be used as a recording directory, be careful not to include disallowed characters, such as "/" "," or "\".

Maximum Megabytes

The logger can automatically delete old calls to conserve the amount of disk space used by each channel. This setting controls the maximum amount of disk space used by each channel. When disk space is low and this threshold setting is reached, oldest calls are automatically deleted to free disk space. To turn this feature off, set this field to "0". If you specify a maximum, the logger will check disk space periodically. If recording size exceeds your setting, the logger will automatically delete files starting with the oldest day. The logger will continue deleting calls until disk usage reaches the setting. It's important to set this so that the total space used does not exceed the available disk space. You may want to run the logger for a few days, and then evaluate the usage on a line-by-line basis before setting this threshold.

USB Serial Driver Installation

If you installed the drivers first before connecting the logger, skip this section.

If you connected the USB logger *before* installing the drivers, Windows will guide you through a USB serial driver installation process. We suggest you cancel this process, disconnect the logger and install the driver CD.

If you have already started the process, you'll need an internet connection to load the driver. Choose the Search option first.

Next, choose "Windows Update" to download the latest driver.

Click "Next" to finish.

Install the logging application as described above.

Using the Logger

Click on the DLI Audio Logger icon to start the application. The main screen appears:

The recording mode for each line (for example VOX, LOOPSTART or OFF) is displayed to the left of the line name. The recording level for each line appears in color when that line is recording.

Adjust the gain controls so that the highest levels (ie. With radio volume controls set high) peak at around 0dBm. Setting the level too high will cause distortion. Low levels may be amplified during playback.

Click on the line name to explore the recordings for that line.

The top of the screen shows the percentage used on the target disk. Errors appear on the bottom of the screen.

The 'Explore Calls' Function

Click on the line name to explore the recording directory for that line. Each line is stored in a separate folder, and each day is stored in a subfolder. The file names correspond to the recording start time. From here, you can edit, copy, or transfer files using Windows Explorer by clicking the right mouse button.

Evidence Builder Recording Analysis Software
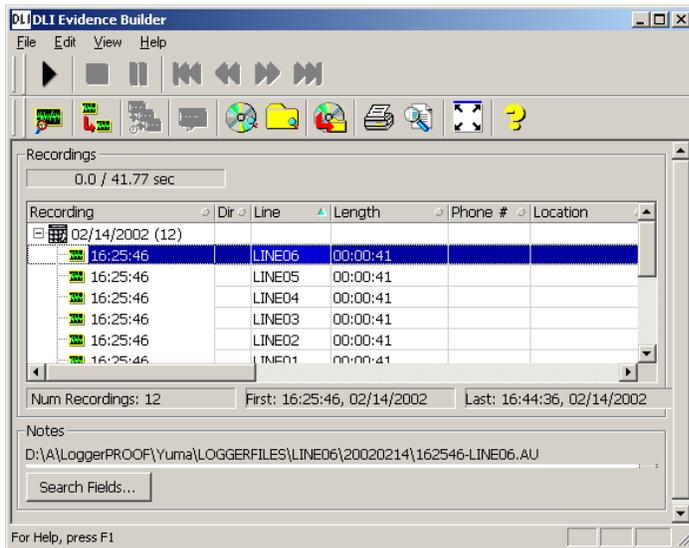
Evidence Builder Software is a powerful program used to locate and analyze recordings. It is provided on the workstation CD. Load this on a workstation and point it at the recording directories to analyze incoming radio calls, create call lists, sort calls, and search by notes. DTMF and Caller-ID are supported on phone lines only.

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.

Remote Monitoring of Live Audio
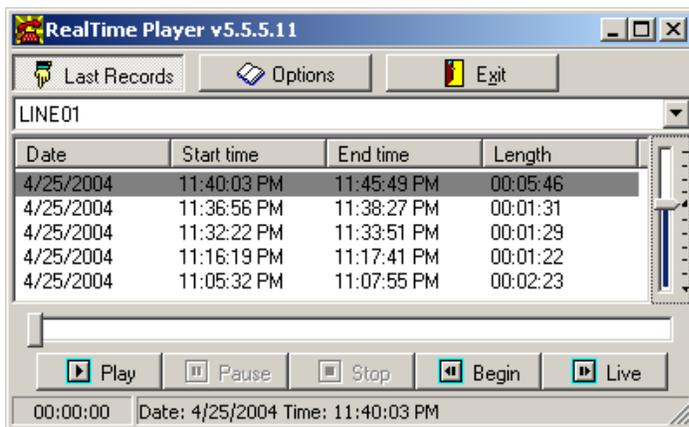
Remote users with access privileges may monitor calls in real time via LAN or WAN connections.

A Real Time Player application is provided on the workstation CD. It's downloadable at: 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. 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.

Support

If we haven't answered your questions here, please call (408) 330-5599 or send an email to engineering@digital-loggers.com. We'll be glad to help.

DIGITAL LOGGERS, INC.