

Streams Audio Directly to/from TDM Channel(s) from/to Sound Device(s)

Linear PCM can be converted to G.726 (40/32/24/16 kbps)

Acts as a Bridge Between T1 E1 Timeslots and Single or Multi-Channel Sound Card(s)

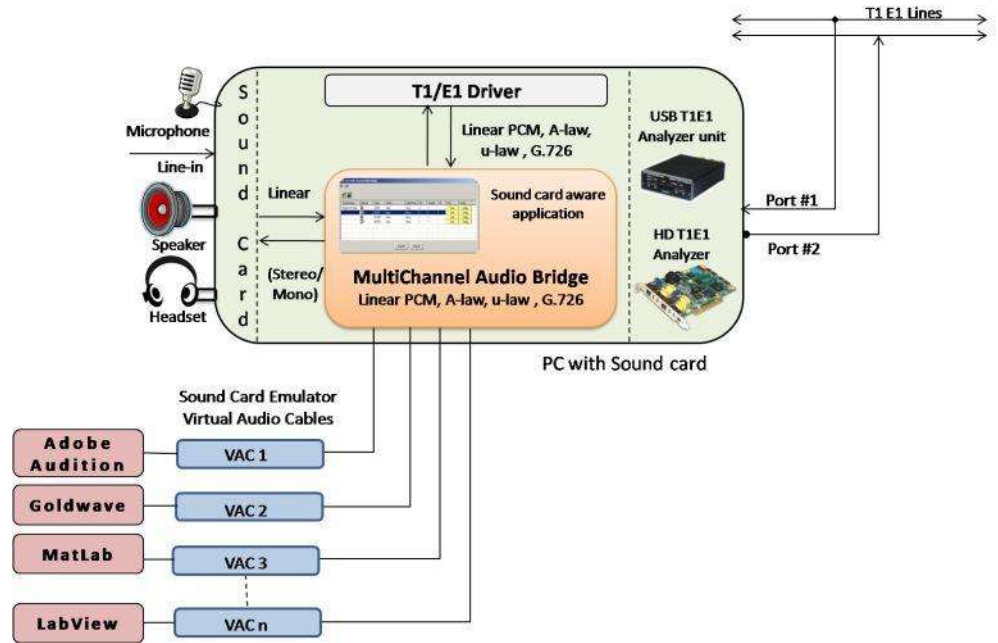
Listen/Drop Speech on T1/E1 Lines

Playback / Record Audio Signals from T1/E1 with other Audio Editing Applications

Optional Mono and Stereo Audio Modes Supported

Troubleshoot Audio Problems in the Network

## Real-Time Multi-Channel Audio Bridge



The ability to send/receive from a sound card directly to T1/E1 timeslots is available once again for the latest HD cards, USB units and Universal Analyzers. This application is called **Real-Time Multi-Channel Audio Bridge**. Listen to T1/E1 timeslots directly on your PC speaker or insert Microphone or Line In signals into T1/E1 timeslots. Real-Time Multi-Channel Audio Bridge application provides a bridge between T1/E1 timeslots and single or multichannel sound card(s). This allows users to insert speech onto T1/E1 timeslots using the PC microphone and listen to speech on T1/E1 timeslots using PC speakers or Headphones.

This powerful optional application can also interwork with other “sound card aware” applications like Goldwave, Cool Edit, Adobe Audition, Audacity, Matlab, LabView and many others. In this case, third party “virtual sound card” software is required, e.g. VAC (Virtual Audio Cable).

### Main Features

- Insert speech on T1/E1 lines using microphone connected to the sound card i.e., stream audio to channel/subchannel from the sound card.
- Listen/Drop speech on T1/E1 lines using PC speakers or Headphone using sound card - Stream audio from channel/subchannel to sound card.
- Supported codecs are A-law, Mu-law, 16 k Linear PCM, G.726 40 Kbps, 32 Kbps, 24 Kbps, and 16 Kbps data rates, G.722 (enhancement soon)
- Mono and Stereo audio modes supported.
- Configure Drop and Insert, codec type, Mono/Stereo Audio Mode, port, Channel, Subchannel for a sound device
- Automatic detection of sound devices including Virtual Audio Cable (VAC)

### Applications

- Audio editing applications like Gold Wave, Adobe Audition that normally send or receive audio streams to /from a sound card can be directed to timeslots on GL's T1/E1 cards
- Real-time transmit streaming from sound card and viewing of receiving stream
- Trouble shoot audio problems on T1 E1 timeslots
- Audio editing features/ special effects such as noise reduction, delay, echo, fade, equalization can be performed with sound aware programs
- Supports non-contiguous timeslots for performing Drop and Insert actions

For more details, please visit our web page <http://www.gl.com/audiodriver.html>.



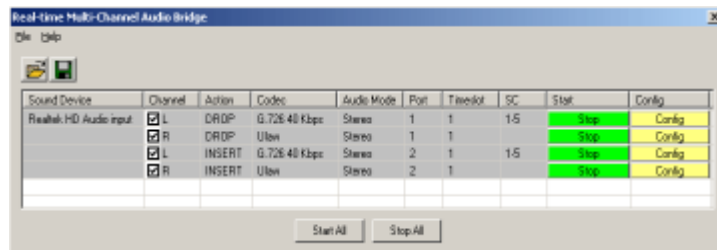
**GL Communications Inc.**

818 West Diamond Avenue - Third Floor. Gaithersburg, MD 20878 • (V) 301-670-4784 (F) 301-670-9187

Web Page Address: <http://www.gl.com/> • E-Mail Address: [gl-info@gl.com](mailto:gl-info@gl.com)

## Audio Bridge Configuration

This application can be used on T1 channels carrying voice traffic from within trunks. With drop function, the audio from the loudspeaker helps to quickly verify the faults such as noise, echo, and power level differences. With insert function, users can overwrite any channel with test tones to perform loopback tests without disrupting the remaining 23 channels. By comparing T1 results, technicians can determine if the problem is at the source or the T1 portion of the network. This application also eliminates the need to externally drop or insert audio from/to VF ports.



### Drop (to PC sound card) & Insert (from PC sound card) Actions

The audio signals from selected T1/E1 channels can be dropped on the Left and Right channels of the PC sound card. Similarly, the audio signals from the PC sound card can be inserted on the selected T1/E1 channels.

Sound Device	Channel	Action	Codec	Audio Mode
Realtek HD Audio input	<input type="checkbox"/> L	DROP	Ulaw	Mono
	<input type="checkbox"/> R	DROP	Ulaw	Mono
	<input checked="" type="checkbox"/> L	INSERT	Ulaw	Mono
	<input type="checkbox"/> R	INSERT	Ulaw	Mono

### Mono and Stereo Modes

In **Mono mode** (Ex: intercom, telephone), all the audio input signals are mixed together and routed through a single audio channel (Left or Right). By default, audio mode is set to Mono.

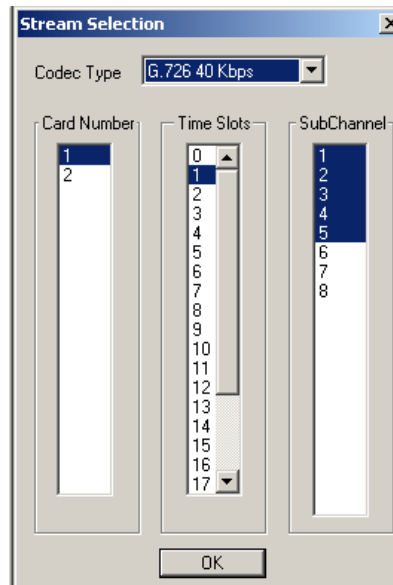
In **Stereo mode** (Ex: radio – multiple sources) utilizes two independent audio signal channels, and the input heard through speakers will be an apparent image of the original sound source. In this case, both L (Left) and R (Right) channels carry audio signals.

Channel	Action	Codec	Audio Mode
<input checked="" type="checkbox"/> L	DROP	G.726 40 Kbps	Stereo
<input checked="" type="checkbox"/> R	DROP	Ulaw	Stereo
<input type="checkbox"/> L	INSERT	G.726 40 Kbps	Mono
<input type="checkbox"/> R	INSERT	Ulaw	Mono

### Codec Selection

- 16-Bits Linear PCM codec with compatible bit rates and audio sampling frequencies can support up to 8 audio channels.
- Both A-Law and Mu-Law PCM (64kbps), 8 bits are required to represent each sample
- **G.726** is a speech codec standard covering the transmission of voice at rates of 16, 24, 32, and 40 kbit/s

## Stream Selection



### Card Number & Timeslots

In a Dual T1/E1 Card, card # 1 and card# 2 are available cards for test. Normally, if card #1 is chosen for Drop then the opposite card, i.e., card #2 is chosen for Insert or vice-versa. Supports non-contiguous timeslots for performing Drop and Insert actions. Timeslots 0 to 24 for T1 and 0 to 31 for E1 are available for testing.

Audio Mode	Port	Timeslot	SC	Start	Config
Mono	2	1		Start	Config
Mono	2	1		Start	Config
Mono	1	1		Start	Config
Mono	1	1		Start	Config

### Subchannels

The data may be transmitted on any of the user-defined bits (contiguous only), in which case, corresponding DS0 bits under Subchannels 8-56 kbps pane must be selected. Depending on the codec type, the number of subchannels can be selected.

For example for 32 kbps pipe the following sub channel selections are valid 1-4.2-5. 3-6. 4-7.

Codec	Audio Mode	Port	Timeslot	SC	Start
G.726 40 Kbps	Mono	1	1	1-5	Start
G.726 32 Kbps	Mono	1	1	3-6	Start
G.726 24 Kbps	Mono	1	1	6-8	Start
G.726 16 Kbps	Mono	1	1	5-6	Start

### Buyers Guide

- [XX017](#) - Real-time Multi-Channel Audio Bridge
- [XX020](#) - Record/Playback File Software
- [SA026](#) - Adobe Audition Software
- [SA048](#) - Goldwave Software
- [UTE001](#) - USB Based T1 or E1 Analyzer Unit
- [HTE001](#) - Universal T1/E1 Card