RTS

Innovating the Future of Global Communications

VLink and VLink LE
Control Panel User Manual

Proprietary Notice

The product information and design disclosed herein were originated by and are the property of Bosch Security Systems, Inc. Bosch reserves all patent, proprietary design, manufacturing, reproduction, use and sales rights thereto, and to any article disclosed therein, except to the extent rights are expressly granted to others.

Copyright Notice

Copyright 2011 by Bosch Security Systems, Inc. All rights reserved. Reproduction, in whole or in part, without prior written permission from Bosch is prohibited.

Warranty and Service Information

For warranty and service information, refer to the appropriate website below:

RTS .... www.rtsintercoms.com/warranty

RTSTW .... www.rtstw.com/warranty

AudioCom.. www.telexaudiocom.com/warranty

RadioCom .... www.telexradiocom.com/warranty

Headsets .... www.intercomheadsets.com/warranty

Customer Support

Technical questions should be directed to:

Customer Service Department
Bosch Security Systems, Inc.
12000 Portland Avenue South
Burnsville, MN 55337 USA
Telephone: 877-863-4169
Fax: 800-323-0498
Info@rtsintercoms.com

Technical Questions EMEA

Bosch Security Systems Technical Support EMEA

http://www.rtsintercoms.com/contact_main.php

DISCLAIMER
The manufacturer of the equipment described herein makes no expressed or implied warranty with respect to anything contained in this manual and shall not be held liable for any implied warranties of fitness for a particular application or for any indirect, special, or con-sequential damages. The information contained herein is subject to change without prior notice and shall not be construed as an expressed or implied commitment on the part of the manufacturer.

Table
of
Contents

Introduction

Introduction

VLink/VLinkLE is a non-blocking, all software multi-channel/multi-access Intercom over **IP** (Internet Protocol) based on a dedicated server/multiple client architecture. VLink/VLinkLE is engineered for professional, mission-critical communications in broadcast, production, military, aerospace, government applications, and beyond.

This document provides information on how to install, configure, and use VLink/VLinkLE software. A troubleshooting section addresses commonly encountered issues. Additionally, a product features list is included.

System Requirements

Hardware Requirements

Dedicated -	Pentium Celeron 1.0GHz or equivalent w/ 1GB RAM
Multi-purpose -	Pentium 4, 2.0GHz or equivalent w/ 1GB RAM
Mac Compatibility -	Dual Core Intel Processor Macbook, Macbook Pro, or Mac desktop running Windows XP; any Mac running parallels with suggested 2GB RAM

NOTE: Lower processing power PCs can be used, however, audio quality may be compromised under heavy CPU loads.

Software Requirement

All versions of Windows XP, Windows Vista, Windows 7, including versions for tablet PCs.

Network Requirement

Recommended configuration - 100BaseT connection over private LAN

Minimum configuration -   56kbps dial-up connection over public Internet

TABLE 1. Bandwidth Utilization per client

Audio Sample Rates	Data Rate (Kbps) [ATS=20ms[a]]	Data Rate (Kbps) [ATS=40ms[a]]	Data Rate (Kbps) [ATS=60ms[a]]	Data Rate (Kbps) [ATS=80ms[a]]	Data Rate (Kbps) [ATS=100ms[a]]
8KHz	32	23.6	20.8	19.4	18.56
16KHz	44.8	36.4	33.6	32.2	31.36
32KHz	46.8	38.4	35.6	34.2	33.36

a.   **ATS** (Audio Time Slice) per packet controls how many 20ms audio frames are transmitted within a single **UDP** (User Datagram Protocol) packet. As each UDP packet requires a fixed amount of overhead, the more frames sent at the same time, the less the UDP overhead which conserves network bandwidth. Conversely, the more audio frames sent per transmission, the greater the system latency and the potential consequence of a lost audio packet.

The default is 20ms.

Firewall Requirements

Allow **TCP** (Transmission Control Protocol) connection for data on port 1000 and UDP connection for audio on port 1000.
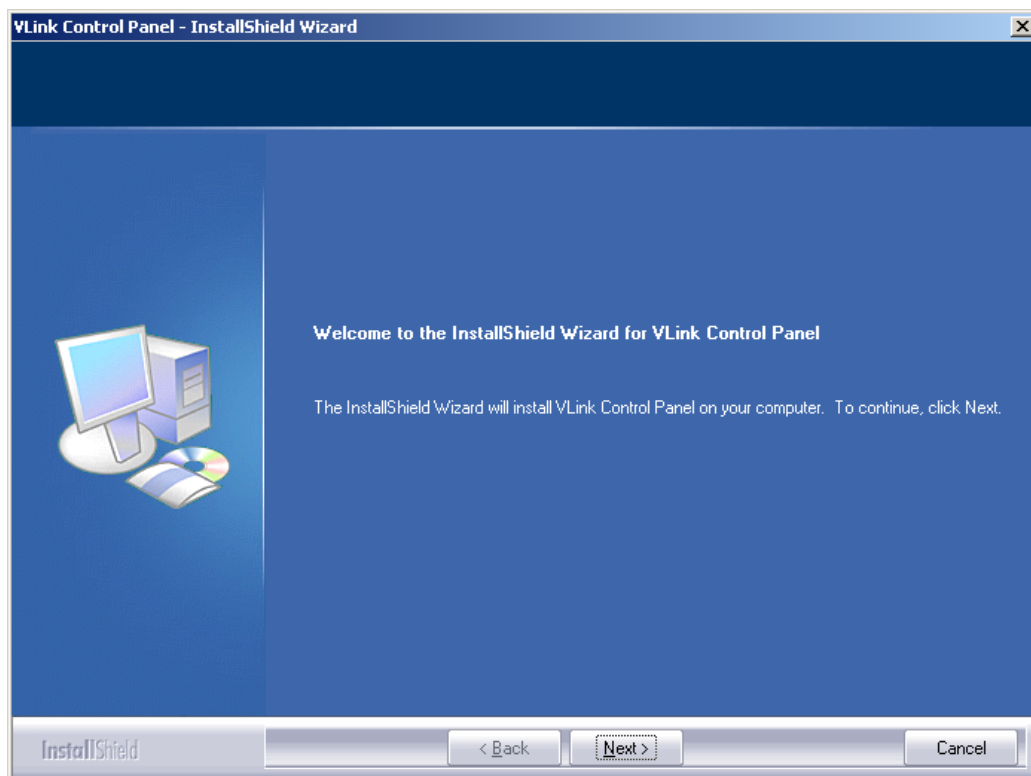
Installation and Configuration

Installation

To **install the VLink/VLinkLE Control Panel**, do the following

1. Locate the **VLink/VLinkLE Control Panel setup file** (typically named *VLink/VLinkLE_Control_Panel_Setup.exe*) provided.
2. Run the **installer**.
3. Follow the **prompts**.

    NOTE: You must accept the VLink License Agreement to install the software.

4. Once installation is complete, select the **Launch VLink/VLinkLE Control Panel** check box.
5. Click **Finish**.
    The VLink/VLinkLE program opens.

Configuration

When running the VLink/VLinkLE Control Panel for the first time, the VLink/VLinkLE Control Panel Configuration window automatically appears.
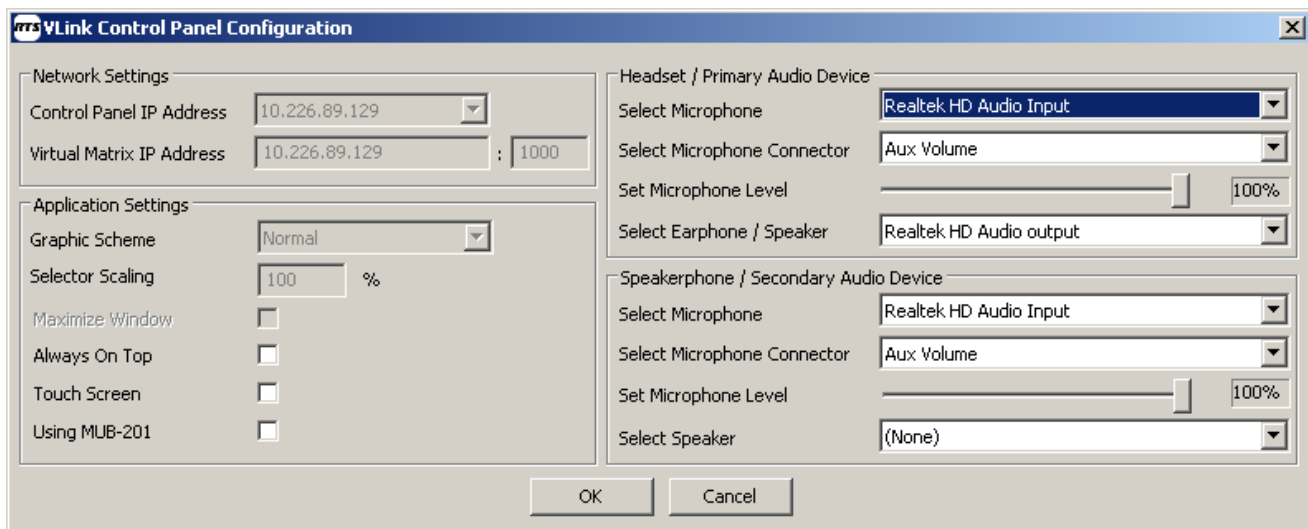

FIGURE 1. Control Panel Configuration

To **configure the VLink/VLinkLE Control Panel**, do the following:

1. In the Control Panel IP Address field, enter your computer's **IP address**.

   NOTE: The IP Address should already be inputted however, some PC's may have multiple connections so be sure that the correct address is selected.

2. In the first and second Virtual Matrix IP Address fields, enter the **Virtual Matrix IP Address server** and then the **port number** supplied by your system administrator.

3. From the Graphic Scheme drop down menu, select either **Normal** or **Large**.

   NOTE: This makes the selectors on the VLink/VLinkLE Control Panel larger to optimize use on small, high resolution screens.

4. Select the **Maximize Window** check box to fit the VLink/VLinkLE Control Panel on the entire screen.

   NOTE: This setting is typically used for dedicated touchscreen applications.
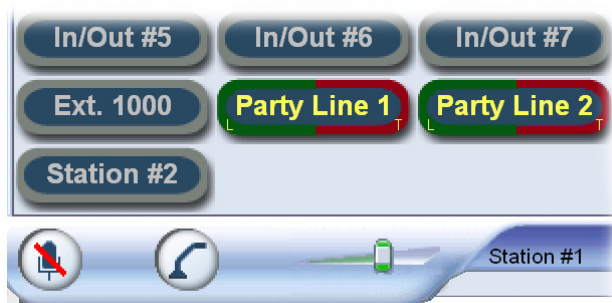
5.   Select the **Always On Top** check box to keep the VLink/VLinkLE Control Panel in front of all other applications.

Normal

Medium

Large

>   **NOTE:** In the Headset/Primary Audio Device group box, the primary audio input/output device must be selected. Typically this is a USB headset, however, any audio input and output device can be used.

6.   From the Select Microphone drop down menu, select the **correct audio input device**.
     Often, but not always, the Select Microphone and Select Earphone/Speaker drop downs automatically default to the correct settings.

7.   From the Select Microphone Connector drop down menu, select the **input jack** the audio input device is to use.
     Typically this is named Microphone.

8.   Using the Set Microphone Level slider, adjust your **microphone audio level**, if necessary.

>   **NOTE:** If AGC (Automatic Gain Control) is enabled, adjusting this control does not affect the audio level sent to the Virtual Matrix, however an improper base setting may result in audio distortion.

9.   From the Select Earphone / Speaker drop down menu, select the **correct audio output device**.

10. Select the **version** of your audio output device that is preceded by DirectSound unless there is a specific reason to do otherwise.

>   **NOTE:** Headset operation is recommended however if only a standard PC Microphone and Speaker are available; select these as the Headset / Primary Audio Device Microphone and Earphone/Speaker and leave the Select Speaker drop down under Monitor / Secondary Audio Device at None.

>   **NOTE:** In the Monitor / Secondary Audio Device group box, the secondary audio output device can be selected. Typically this is an external speaker that allows monitoring the VLink/VLinkLE Control Panel even when the headset is removed.

11. From the Select Microphone drop down menu, select the **correct audio input device**.

> **NOTE:** Often, but not always, the Select Microphone and Select Earphone / Speaker drop downs automatically default to the correct settings.

12. From the Select Microphone Connector drop down menu, select the **input jack** the audio input device is to use.

> **NOTE:** Typically this is named *Microphone*.

13. Using the Set Microphone Level slider, adjust your **microphone audio level**, if necessary.

> **NOTE:** If **AGC** (Automatic Gain Control) is enabled, adjusting this control does not affect the audio level sent to the Virtual Matrix, however an improper base setting may result in audio distortion.

14. Click **Close** to save the configured settings and close the VLink/VLinkLE Control Panel Configuration window. *The VLink/VLinkLE Login window appears*.
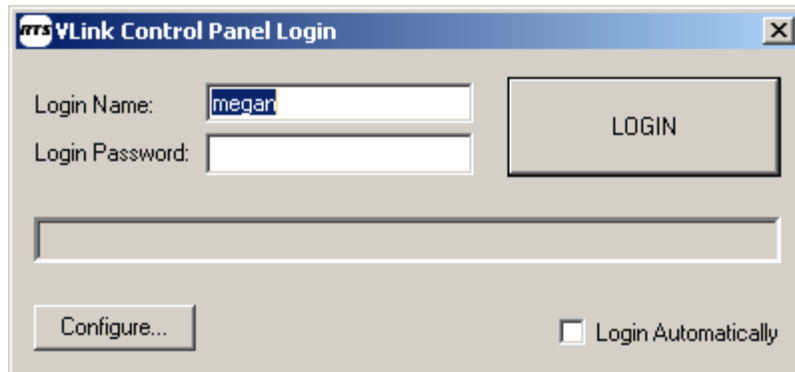
To **log in to the control panel**, do the following:

1. In the Login Name field, enter the **login name**.
2. In the Login Password field (if configured for password protection), enter the **password supplied by your system administrator** (Optional).

> **NOTE:** System Administrators: you can find default logins for users and devices in the VLink/VLinkLE System Administration application (default login name *admin* with no login password), in the main window under Client Configuration. Refer to the VLink/VLinkLE System Administration User Guide (PN F01U217816) for more information.

3. Click **Login**. *The Control Panel Window appears. The VLink/VLinkLE Control Panel software installation is now complete and you are ready to communicate.*

If **a Firewall is active**, do the following:

> Ask for **permission** to allow the VLink/VLinkLE Control Panel to communicate with the VLink/VLinkLE Virtual Matrix, in which case you should select *Allow* and *do not ask me again* or their equivalents.
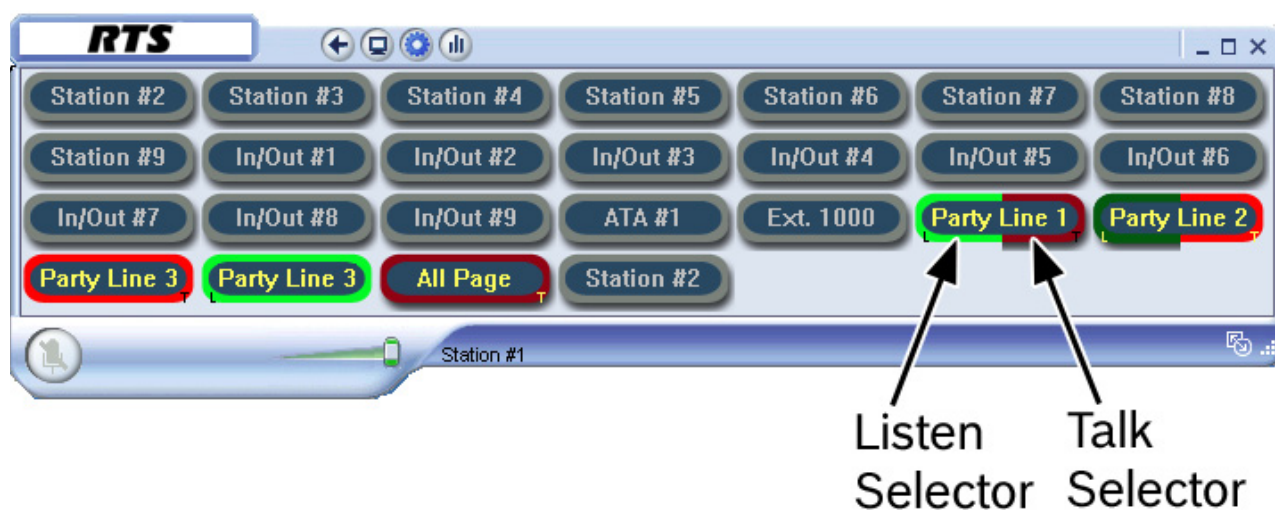
Features and Basic Functionality

FIGURE 2. Control Panel

NOTE: The control panel can be minimized; however, it automatically reappears when a new call is received.

Talk/Listen Selectors

The main display provides a series of buttons referred to as Talk and Listen selectors. An available Talk selector is outlined in red while an available Listen selector is outlined in green.

FIGURE 3. Dual-Operation Selector

Selectors can be configured to display both the Talk and Listen selector operation (see Figure 3. The Talk and Listen selectors are optionally shown with a Selector Legend indicated as *L* for Listen and *T* for talk for operators with color recognition disabilities. If a selector is grayed out, this indicates that the source or destination is not connected to the system and as such not available for selecting talk or listen.

Selectors display channel state using the following patterns:

> *Voice activity -*   color oscillation of selector name

> *Incoming call -*   fast flash of talk selector

>   **NOTE:** Click on the selector to establish a return voice path.

> *Device active tally -*   slow flash of talk selector

> *In-use tally -*   slow double flash of talk selector

A selector can refer to either an individual source or destination or to a Group Call or Party Line.

> *Group Call -*   A single selector activates a Talk and Listen to multiple destinations.

> *Party Line -*   A dynamic conference whereby activation of the associated selector automatically makes you a participant of the selected conference. When talking to a Party Line you talk to everyone who is listening to that Party Line. When listening to a Party Line, you listen to everyone who is talking to that Party Line.

To **activate a listen on a particular source**, do the following:

> **>**   Click a **dim green selector**.
>   *When active the selector turns bright green*.

To **deactivate a listen on a particular source**, do the following:

> **>**   Click the **bright green selector**.

To **activate a talk on a particular destination**, do the following:

> **>**   Click a **dim red selector**.
>   *When active the selector turns bright red.*

To **deactivate a talk on a particular source**, do the following:

> Click the **bright red selector**.

To **use a selector in momentary mode**, do the following:

> Click and hold the **selector**.
> *It deactivates when you release*.

Selector Context Menu

The **Selector Context** menu, shown in Figure 4, is used to adjust volumes, release remote talks, enable and disable client logins, and display the dial pad for dialing out.

To **open the Selector Context Menu**, do the following:

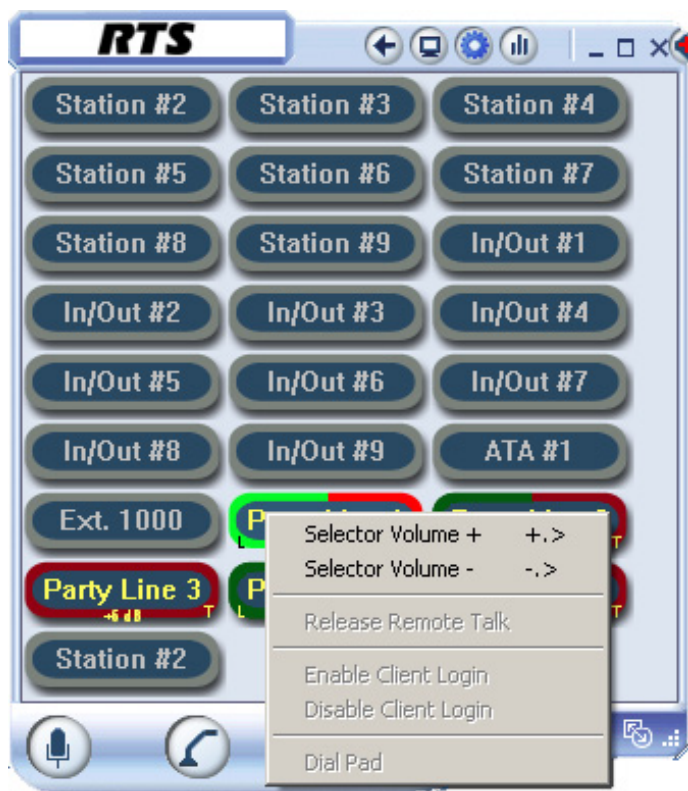> Right-click a **selector**.
> *A popup menu appears*.

FIGURE 4. Selector Context Menu

Selector Volume +

The **Selector Volume +** menu is used to increase the volume for the selected selector.

Available options for this menu are: *+6dB, +12dB, +18dB, +24dB,* and *+30dB*.

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

1. Right-click on the **control panel interface**.
    A popup menu appears.
2. Click **Selector Volume+**.
    The volume increases +6dB.

> **NOTE:** You can also use your computer keyboard by ensuring the application has keyboard focus, the label you want to change is highlighted with the mouse and then the +/- keys on the numeric keypad are pressed.

Selector Volume -

The **Selector Volume -** menu is used to decrease the volume for the selected selector.

Available options for this menu are: *-6dB, -12dB, -18dB, -24dB,* and *-30dB*.

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

1. Right-click on the **control panel interface**.
    A popup menu appears.
2. Click **Selector Volume-**.
    The volume increases -6dB.

> **NOTE:** You can also use your computer keyboard by ensuring the application has keyboard focus, the label you want to change is highlighted with the mouse and then the +/- keys on the numeric keypad are pressed.

Release Remote Talk

The **Release Remote Talk** menu item is used to unlatch another user's talk path to your station.

Enable Client Login

The **Enable Client Login** menu item is used to restore login privileges to the user. The user must have administrator rights to use this feature.

Disable Client Login

The **Disable Client Login** menu item is used to log a user out and prohibit reentry to the application. The user must have administrator rights to use this feature.

Dial Pad

The **Dial Pad** menu item is used to open the dial pad. You can use the dial pad to dial a phone number you want to call.
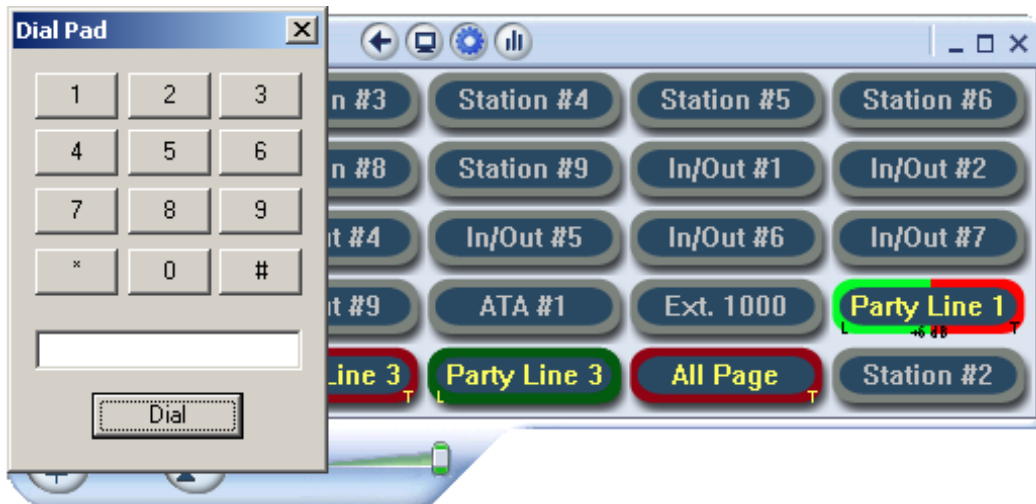

FIGURE 5. Dial Pad

Integrated Telephone Interface

The **Integrated Telephone Interface** is supported by the control panel and allows both outbound call initiation and inbound call reception.

To **make a call**, do the following:

1. Right-click the **selector corresponding to the telephone interface**.
    The context menu appears.
2. Select **Dial Pad**.
3. Enter the **number** to dial.
4. Click **Dial**.
    The connection is initiated. The talk and listen functions activate and are left on until they are released which then drops the call.

Any number of operators may join the call by turning on their talk and listen buttons, but the line is held off hook until all operators have released their talk buttons.
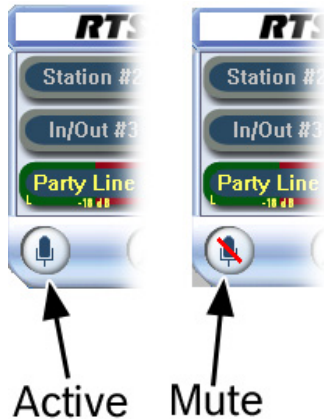
To **receive a call**, do the following:

> Click on the **flashing selector**.
    Depending on availability, Caller ID may display the telephone number of the caller.

Microphone

To **mute your microphone**, do the following:

> **>**   Click the **microphone button** on the lower left hand portion of the control panel.

Earphone and Speaker Level Adjustments

To **mute the speakers used to monitor the system**, do the following:

1.   Click the **speaker button** on the lower left hand side of the control panel.
2.   Using the slider, adjust the **volume** of both the speakers used to monitor the system and your headset volume across all channels.

Control Panel Buttons

| Button	Description
	Logs the control panel off and displays the control panel login window.
	Opens the VLink/VLinkLE Control Panel Configuration window. This window is also accessible from the Login screen.
	Opens the VLink/VLinkLE Control Panel Options window. For more information, see "VLink/VLinkLE Control Panel Options Window" on page 15.
	Opens the Statistics window. For more information, see "VLink/VLinkLE Control Panel Statistics" on page 18.

VLink/VLinkLE Control Panel Options Window
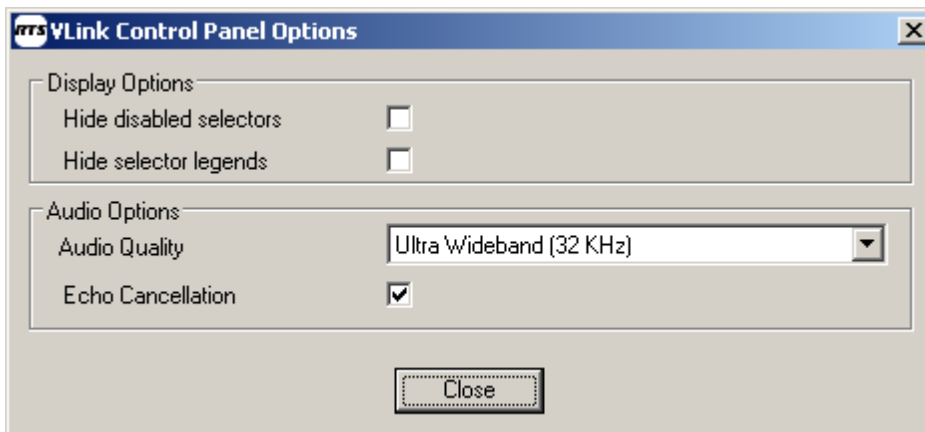
FIGURE 6. VLink/VLinkLE Control Panel Options Window

Display Options Group Box

Hide Disabled Selectors Check Box

The **Hide Disabled Selectors** check box is used to hide the selectors assigned to users or audio devices not logged into the system. When they come online, they dynamically appear.

Hide Selector Legends Check Box

The **Hide Selector Legends** check box is used to hide on-selector listen and talk identifiers.

Audio Options Group Box

Audio Quality Drop Down Menu

The **Audio Quality** drop down menu is used to select the up to three (3) different audio sampling rates: *Narrowband (8KHz)*, *Wideband (16KHz)*, and *Ultra Wideband (32KHz)*.

Echo Cancellation Check Box

The **Echo Cancellation** check box is used to activate the Control Panel's echo cancellation feature. Note that this function is designed to reduce the possible echo heard by someone talking to your Control Panel and has no audible effect on what is heard by the current Control Panel.

Control Panel Context Menu

The **Control Panel Context Menu** is used to quickly configure the control panel with basic settings, turning the microphone or speaker on or off, adjusting the volume, opening the Statistics window, and logging out.

To **open the Control Panel Context Menu**, do the following:

> > Other than on a selector, right-click **anywhere on the control panel interface**.
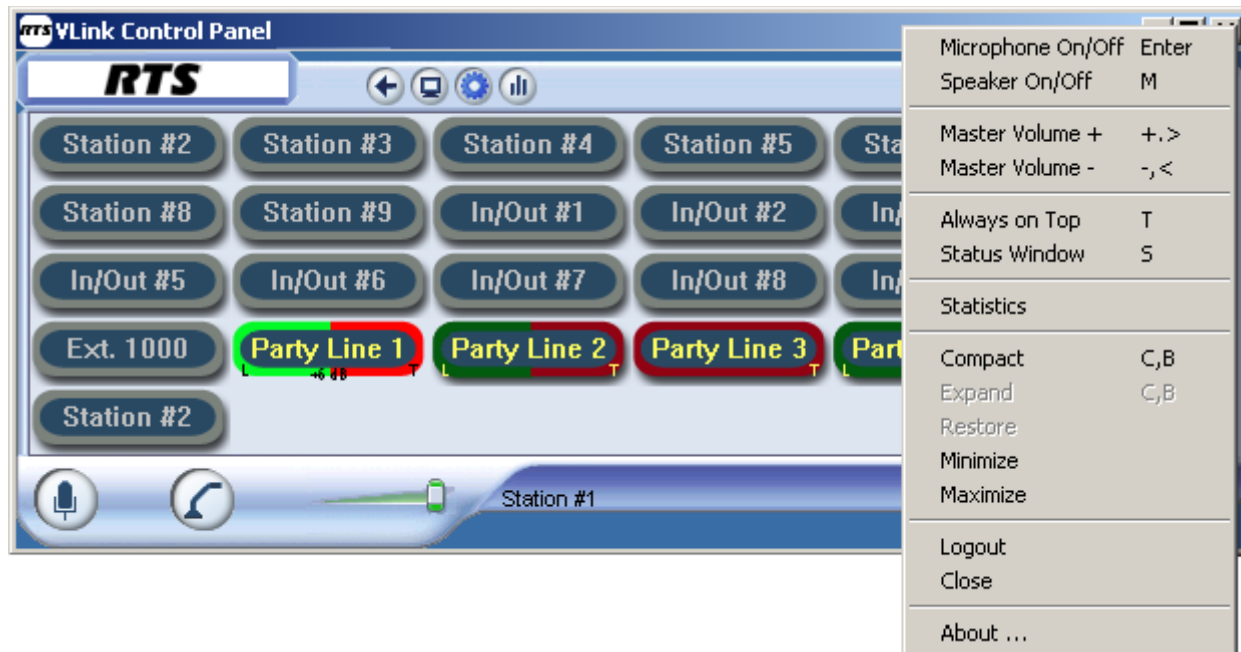>   *The Control Panel Context Menu appears*.

FIGURE 7. Control Panel Contex Menu

Microphone On/Off Menu Item

The **Mircrophone On/Off** menu item is used to turn the microphone on and off.

Speaker On/Off Menu Item

The **Speaker On/Off** menu item is used to turn the speaker on and off.

Master Volume +

The **Master Volume +** menu is used to increase the volume.

Available options for this menu are: *+6dB, +12dB, +18dB, +24dB,* and *+30dB*.

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

   1.   Right-click on the **control panel interface**.
        A popup menu appears.
   2.   Click **Master Volume+**.
        The volume increases +6dB.

        NOTE: You can also use your computer keyboard by first ensuring that the application has keyboard focus,
                   highlighting the label you want to change with the mouse and then use the +/- keys on the numeric keypad.

Master Volume -

The **Master Volume -** menu is used to decreases the volume.

Available options for this menu are: *-6dB, -12dB, -18dB, -24dB,* and *-30dB*.

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

   1.   Right-click on the **control panel interface**.
        A popup menu appears.
   2.   Click **Master Volume -**.
        The volume descreases +6dB.

        NOTE: You can also use your computer keyboard by first ensuring that the application has keyboard focus,
                   highlighting the label you want to change with the mouse and then use the +/- keys on the numeric keypad.

Always On Top Menu Item

The **Always On Top** menu item is used to keep your control panel always in the foreground.

Compact Menu Item

The **Compact** menu item is used to hide the control panel's borders.

Expand Menu Item

The **Expand** menu item is used to show the control panel's borders.

Restore Menu Item

The **Restore** menu item is used to restore the control panel to its default setting.

Minimize Menu Item

The **Minimize** menu item is used to hide the control panel.

NOTE: When a call is received while the control panel is minimized, it automatically restores the window.

Maximize Menu Item

The **Maximize** menu item is used to enlarge the control panel window so it fills the entire screen.

Logout Menu Item

The **Logout** menu item is used to log out of the control panel. When selected, the application logs you off and the VLink/VLinkLE Login window appears.

Close Menu Item

The **Close** menu item is used to close the application completely. When selected, the control panel window closes and the VLink/VLinkLE Login window does not appear.

About... Menu Item

The **About...** menu item is used to view your control panel version and support contact information.

NOTE: The control panel can be oriented vertically (in various degrees) by clicking and holding on the left or right edge of the frame and dragging it horizontally.

VLink/VLinkLE Control Panel Statistics

The **VLink/VLinkLE Control Panel Statistics** window, shown in Figure 8, displays your send and receive audio rates and packet loss data.

FIGURE 8. VLink Control Panel Statistics Window

Multi-Channel, Multi-Access Communications

The following is a detailed functional description of how to use the VLink/VLinkLE Control Panel for multi-channel, multi-access communications.

NOTE: The system is non-blocking, meaning that any number of operators may talk to a single operator simultaneously; no busy condition results. When talk is pushed, the audio path is completed with no action required by the receiving party.

Selector Configuration

When you log into your control panel, a number of color-coded buttons, referred to as Selectors appears. You activate these by clicking them with your mouse. There are three (3) primary types of selector configurations your systems administrator has the ability to program:

- Point-to-Point for communication directly between two (2) operators
- Group Call for communication from one (1) operator to many operators simultaneously
- Party Line for a dynamic group conference

The selector configuration can typically be configured with names on the keys, which your system administrator has complete flexibility in naming.

A point-to-point may show an individual's name or function, such as Sam, Director, or Plant Mgr. A group call may be named descriptively such as *Paging*, *Emergency*, or *Security*. Similarly, a Party Line may be named *Conference*.

Selector Colors and Function

Colors

Gray Keys -   signify an offline point-to-point call which indicates that the associated control panel or device interface is not connected to the VLink/VLinkLE Virtual Matrix.

Green Keys -   signify listen keys. A dim green key signifies an online point-to-point or group call channel meaning the operator(s) on the other end of the channel are logged into the system. Party lines always appear online. You can only listen on a channel when you activate it by clicking on it, changing the dim green key to bright green.

Red Keys -   signify talk keys. a dim red key signifies an operator on the other end of the channel is logged into the system. you can only talk on a channel when you activate it by clicking on it, changing the dark red key to bright red. A blinking red key on a point-to-point channel signifies that the operator on the other end is calling you; click the key to establish a return voice path.

Green/Red Keys -   signify combined talk/listen keys. Click the left portion of the selector to activate a listen; click the right portion of the selector to activate a talk; click on the middle of the selector to activate a talk/listen.

Functions

Point-to-Points -	typically assigned as talk only to prevent monitoring of other control panel communications.
Party Lines -	typically have talk and listen keys.
Group Call Channels -	typically are assigned as talk only. You can listen and/or talk to as many channels as are available on your control panel, simultaneously.
Dynamic Answer Back Selectors -	indicate incoming calls from clients for whom a dedicated key is not programmed.

IFB

IFB serves as a voice cueing mechanism for on-air talent. The talent listens to a program audio signal which can be interrupted by the voice of a production person (such as a director or producer) for the purpose of giving instructions to the talent regarding the show in progress.

Once IFB is configured (refer to the VLink/VLinkLE System Administration Application User Guide for detail instruction on configuring IFB), click on your IFB key to establish a line of communication with the receiving user. The button will be set to *momentary only* so the IFB function remains active only while the key is pressed. All other active listen channels of the receiving user are temporarily muted or dimmed until the sender releases the IFB key. Upon release of the key, normal operation is restored. All control keys programmed to operate the same IFB output flash to indicate the function is in use.

ISO

ISO is an intercom function by which a temporary and private communication link is established between an operator who is located at an intercom control panel and another operator. The function is valuable wherever a short term private exchange is required between two (2) operators who are normally sharing the conversation required to accomplish a group activity. The most common use for this function is in television production for camera and video operators. The function also is found in military and commercial systems.

Once ISO is configured (refer to the VLink/VLinkLE System Administration Application User Guide for detail instruction on configuring ISO), click the ISO key to establish a private line of communication with the programmed destination station or port. Pressing the key again releases the ISO function and the system returns to normal operation. While the function is in use keys that are programmed on multiple panels for the same destination flash to indicate the function is in use.

Interfacing with other Systems

VLink/VLinkLE interfaces with 2-way radios, hardware-based communications systems, and public/private telephone networks. These channels are typically designated to reflect such and may be talk only (such as paging) or talk/listen. They can be set up as Point-to-Points, Group Calls, or Party Lines depending on functional requirements. For use with a 2-way radio, clicking on the talk key initiates the transmit function.

Troubleshooting

Following are answers to the most commonly experienced issues of new users.

Q: When attempting to login to the Virtual Matrix I get a *Cannot connect to Virtual Matrix* message?

A: The Control Panel is unable to establish a TCP/IP data connection with the Virtual Matrix. Check the Control Panel Configuration to ensure Control Panel IP Address is valid and represents a valid and active network connection. Ensure the Virtual Matrix IP Address is entered exactly as provided with the designated port number. Check to ensure a corporate firewall is unintentionally blocking the designated TCP/IP data port.

Q: When attempting to login to the Virtual Matrix I get a Unable to establish return audio path message?

A: The Control Panel is unable to establish a UDP audio connection with the Virtual Matrix. Check to ensure a corporate firewall is not intentionally blocking the designated UDP audio port which is typically the same as the TCP/IP data port.

Q: When attempting to login to the Virtual Matrix I get a *Provided user name and/or password is invalid!* message?

A: The Control Panel is unable to validate the username and password. Check to ensure the name is typed exactly as provided as the username and password are both case sensitive. Check to ensure the correct TCP/IP data port is specified to ensure you are logging in to the correct system.

Q: Why can I hear people but they can't hear me?

A: Click Configure from your login window or the control panel. Under Headset/Primary Audio Device verify that the correct microphone is chosen under Select Microphone and that the correct headset microphone input is selected under Select Headset Mic Input. Verify that the microphone level is not set to zero.

On the lower left hand corner of your control panel check to see that your microphone is not muted represented by a red line through the microphone image. Each click on the image cycles between microphone on and microphone mute.

Click the statistics icon and under Send Audio Rate, verify that audio packets are being sent. If not, there may be a problem with the selected Headset device.

   NOTE: The Send Audio Rate does not indicate audio packets are being sent during silent periods.

Check that your system is functioning correctly by going to your Sounds and Audio Devices Properties found in your Windows Control Panel. Select Voice. Under Voice playback and Voice recording, select USB Audio and click Test hardware towards the bottom of the page and follow the wizard.

Q: Why can people hear me but I can't hear them?

A: Click Configure from your login window or the Control Panel. Under Headset/Primary Audio Device, verify that the correct earphone or speaker is selected under Select Earphone/Speaker. Check to ensure that the Volume slider is toward the right side of the slider bar. Click the Statistics button and under Receive Audio Rate verify that audio packets are being received. If not, you are likely being blocked by your firewall and you should consult your network administrator.

   NOTE: The Receive Audio Rate will not indicate that audio packets are being received during silent periods.

Check your audio device master volume either by clicking on the speaker icon in your system's tray or by going to Sounds and Audio Devices found in your Windows Control Panel. Select Voice. Under Voice playback, select your selected Headset and/or Speaker and click Volume. Adjust the slider bar under Volume and check that the mute button is not selected.

Check that your system is functioning correctly by going to your Sounds and Audio Devices Properties found in your Windows Control Panel. Select Voice. Under Voice playback and Voice recording, select your selected Headset and/or Speaker and click 'Test hardware' towards the bottom of the page and follow the wizard.