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# TELEX

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## RADIO DISPATCH PRODUCTS

*Model ADHB-4  
Technical Manual*

*up to and including version 3.6000*



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**OPENSSL PROJECT**

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>). This product includes cryptographic software written by Eric Young ([eay@cryptosoft.com](mailto:eay@cryptosoft.com)). This product includes cryptographic software written by Tim Hudson ([tjh@cryptosoft.com](mailto:tjh@cryptosoft.com)).

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## *Overview*

The **ADHB-4** (Advanced Digital Headset Box) is easy to install and configure dispatch audio system that adds microphone and speaker capabilities, in various forms, to a C-Soft console. The ADHB-4 replaces the sound card in the PC, offering the flexibility of controlling a wider selection of audio options.

Audio input and output is routed to devices by connecting a combination of headsets, desk mic, speakers, or a telephone to the unit. Electret and dynamic microphones are both supported. Additionally, a footswitch can be installed for hands-free operation. The unit can be mounted on the desktop or below it. Standard cable connections are made directly to a PC, to access C-Soft, and an Ethernet connection for firmware upgrades, and unit configuration.

Audio parameters are set up within the web browser configuration software. Access to the radio dispatch system is provided by configuring the base IP Address, Subnet Mask and Gateway within the ADHB-4 software. Additionally, the input and output gain control, **PTT** (Push-To-Talk) source, and PTT priority are configured for the connected audio equipment. Status is conveniently summarized on one (1) window in the configuration software for quick evaluation of connected audio devices.

The front panel is equipped with a color **TFT-LCD** (Thin Film Transistor-Liquid Crystal Display), allowing instant indications for ADHB-4 activity. The console operator can quickly determine which device audio is being routed to/from, as well as footswitch activity, volume, transmit status and receive status. A bar graph indicates the headset volume level and can be changed with the volume buttons on the front panel. A system information menu is also available. A single **LED** (Light Emitting Diode) on the front indicates power when green and PTT when red. A single red LED on the left side panel indicates phantom power is enabled when red and disabled when dark.

Softkeys on the front panel allow the console operator to change the clock, adjust the display's backlight brightness, and change the IP Address and Subnet Mask.

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## *Computer System Requirements*

- Operating System:** Microsoft\*<sup>1</sup> Windows XP (32 bit only) or Microsoft Windows 7 (32 bit only).
- Network Connection:** 10Mbps or 100Mbps, full-duplex TCP/IP connection. Static IP Address preferred.
- Browser Requirements:** Microsoft Internet Explorer Version 6.0 or later  
Mozilla Firefox Version 4.0 or later
- Processor Speed:** Intel Pentium Dual CPU 1.80GHz.
- Memory:** Minimum of 2.00GB recommended.
- USB (Universal Serial Bus):** Version 2.0

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1. See "Copyright Notice" on page 2.

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## *Features*

- Ethernet Communication
- IPv6 compliant for addressing and product configuration
- Six (6) Audio Channels
- One (1) Dual 1/4" Headset Jack
- One (1) XLR Connector to Accept any Low Impedance Microphone
- One (1) Desk Mic Jack
- One (1) Phone Jack
- One (1) NENA I/O Jack with Offhook Detection
- Supports up to Three (3) Pairs of Speakers
- Any standard amplified speaker.
  - LED Power and PTT Indicator
  - 12VDC Operation
  - Two (2) DB9 Connectors Supporting Remote Headset Box Connections
- ADHB-4 provides power to an RHB.
- Dual channel 1/4" headset jack.
- Volume control knob.
- Supports both Select and Unselect audio with a dual-sided headset
- LED for power/PTT indication.
  - Programmable Gain Control
  - Softkey Configuration Menu
  - Footswitch Inputs for PTT and Monitor
  - Two Relays with Form C contacts
  - AUX Inputs are DC Isolated
  - Color LCD Type Display
- Host-synched clock with 12- and 24-hour modes.
- Available speaker indication.
- PTT indicator.
- Active inputs indicator.
- IP Address.
- Network setup information
  - Network Mask
  - IP Address
- PTT Indicator for RHB 1 and RHB 2.
- Adjustable contrast for the backlight.
- Connectivity indicator for headset.
- USB connection indication.

## Controls and Indicators

### Front Panel Controls and Indicators

1. **Volume Buttons** - The Volume buttons are used to adjust the volume to the controller headset connection and selecting options while in the front panel's soft menu.
2. **Color Display** - The color display gives the user graphical indications of events as they occur in either normal operation mode or in programming mode.
3. **Softkeys (4)** - The Softkeys are used to enter programming mode and interact with the soft menus.
4. **Front LED Indicator** - The Front LED indicates power to the unit is on if green; a PTT event is occurring if red.

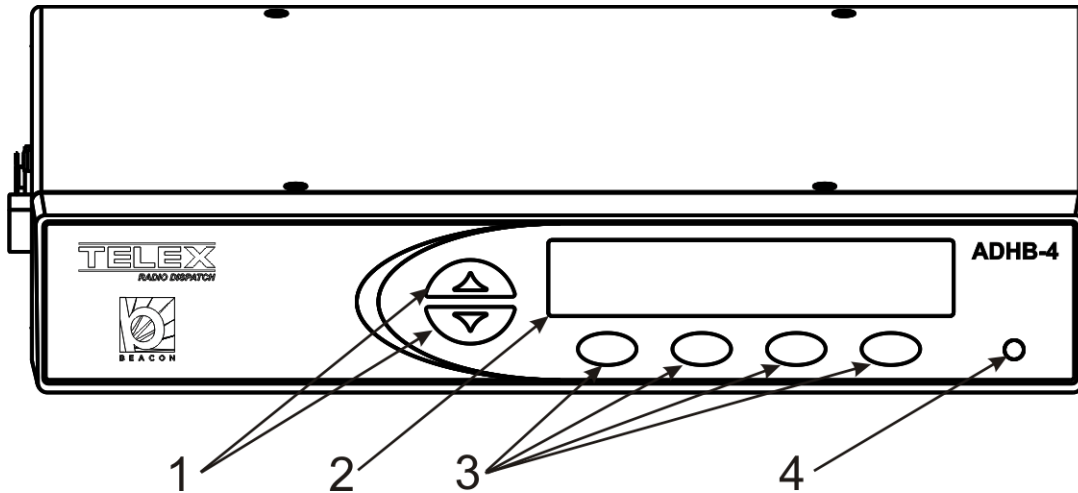


FIGURE 1. ADHB-4 Front Panel Controls and Indicators



## Back Plane Connections

1. **USB Port** - The USB Port is used to connect the ADHB-4 to a computer.
2. **10/100 NETWORK Port** - The 10/100 NETWORK port is used to connect the ADHB-4 to an IP Network with a standard RJ-45 Ethernet interface cable. The Ethernet port connector supports a Base 10/100 Cat 5E connection.
3. **NENA Jack** - The NENA (National Emergency Number Association) jack is used to connect an RJ-12 NENA phone network.
4. **PHONE Jack** - The PHONE Jack is used to connect a phone supplied with a mini RJ 4-pin connector.
5. **FOOTSWITCH Jack** - The FOOTSWITCH jack is used to connect a footswitch and supports two inputs: PTT and monitor.
6. **ACCESSORY Port** - The ACCESSORY port supports a DB-15 to provide access to miscellaneous functionality.
7. **REMOTE HEADSET Ports (1 and 2)** - The REMOTE HEADSET ports (1 and 2) are used to connect an optional RHB (Remote Headset Box) using the DB-9 cable supplied with the RHB unit. Up to two (2) RHBs can be connected.
8. **DESKMIC Jack (RJ12)** - The DESKMIC jack is used to connect an RJ-12–fitted electret or dynamic microphone.
9. **SPEAKER 1–2, 3–4, 5–6 Jacks** - Each SPEAKER jack is used to connect a speaker pair. These three (3) receptacles are equipped with 3.5mm stereo jacks requiring self-powered, amplified PC type speakers.
10. **POWER Jack** - The POWER jack is used to connect power to the unit via a 2.5mm center positive plug. The power requirements are 12VDC to 16VDC, 500mA.

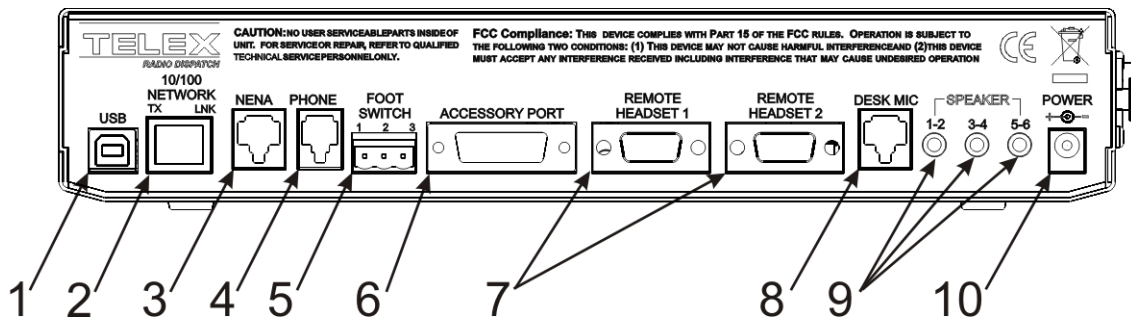


FIGURE 2. ADHB-4 Back Plane Connections

## Side Panel Connections

1. **MIC (XLR) Connector** - The MIC connector is used to connect a 3-pin XLR dynamic microphone. PTT is initiated from C-Soft or a footswitch.
2. **POWER LED Indicator** - The LED indicates phantom power is supplied to the XLR jack when lit.
3. **HEADSET Jack** - The HEADSET jack is used to connect a 4- or 6-wire headset fitted with a dual channel 1/4" plug. This headset is known as the controller headset.
4. **Polarity Hash Marks** - Polarity Hash Marks are provided on the side of the unit to indicate headset connector orientation.

**NOTE:** The polarity hash marks on the DISH series headset connectors, are reversed, i.e. the connector's hash marks must be rotated 180° from the hash marks on the ADHB-4 before inserting it into the jack.

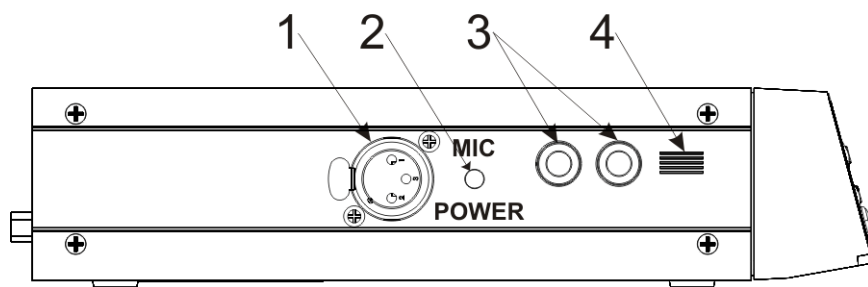


FIGURE 3. ADHB-4 Side Panel Connections

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## *Specifications*

**Power Requirements:**

+12VDC to +16VDC, semi-regulated, 1.25A.

**Audio Distortion:**

2% THD maximum

**Frequency Response:**

±1.5dB, 300 to 3000Hz

**NENA Input/Output Impedance:**

600 Ohms nominal

**Relay Contact Ratings:**

1A 125VAC—Form C Contacts

**Ethernet Speed:**

10/100 BaseT

**USB:**

Version 2.0

**Storage Conditions:**

Temperature: 28.8° to 48.8° C (-20° to 120° F)

Humidity: 100% Non-Condensing

**Operating Conditions:**

Temperature: 0° to 55° C (32° to 131°F)

Humidity: 100% Non-Condensing

Altitude: -500 to 13000 ft.

**Dimensions:**

50.8mm H x 209.5mm D x 279.4mm W (2" H x 8.25" D x 11" W)

**Weight:**

4.40 lbs (unit), 6.7 lbs (shipping weight)



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**WARNING:** 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. For troubleshooting steps contact the technical support center. See “Contact Information” on page 2 for contact information.

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## *Installation*

### REFERENCE:

- The installation process requires you to reference both this manual and the C-Soft Software Console Administrator’s Guide (P/N F.01U.218.561) which is available on the CD that ships with the ADHB-4 or can be downloaded at [www.telexradiodispatch.com](http://www.telexradiodispatch.com).
- For more information, see the ADHB-4 Quick Start Guide, available for download at [www.telexradiodispatch.com](http://www.telexradiodispatch.com).

### To Install your ADHB-4:

- Step 1** Determine where to mount your **ADHB-4**.
- Step 2** Determine if an **RHB** is required for your system. See “Remote Headset Box” on page 85.
- Step 3** Connect **hardware** to the ADHB-4. See “Connect ADHB-4 Hardware” on page 32.
- Step 4** Install the current version of **C-Soft**. For more information. See the C-Soft Software Console Administrator’s Guide (P/N F.01U.218.561).
- Step 5** If using Windows 7 OS, install the **ADHB-4 driver**. See “Install the ADHB-4 Driver with Windows 7” on page 33.
- Step 6** Connect the ADHB-4 to **power**. “Apply Power to the ADHB-4” on page 38.
- Step 7** Connect the **ADHB-4** to the PC. “Connect the USB Cable” on page 38.
- Step 8** If using Windows XP OS, install the **ADHB-4 driver**. See “Install the ADHB-4 Driver with Windows XP” on page 35.
- Step 9** Set up the **ADHB-4** using the web browser configuration windows. See “Configuration” on page 39.
- Step 10** Set up **C-Soft parameters**. See the C-Soft Software Console Administrator’s Guide (P/N F.01U.218.561).

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**CAUTION:** Do not apply power to the unit until step 6. Failure to heed this caution will result in damage to the unit. Bosch is not responsible for damage caused when power is applied before the installation process is complete and the warranty can be voided.

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## ADHB-4 Mounting

### Mounting

The ADHB-4 is mounted on or under a surface such as a desk by either placing it on the work surface or using mounting brackets to fix it in place.

- Ensure there is enough clearance for back and side panel connections.
- Provide space for at least one (1) speaker pair.

**NOTE:** A dispatch monitor, weighing up to 35 lbs. maximum, can be placed on top of the unit.

### ADHB-4 Mounting Brackets

The ADHB-4 can be mounted on the underside or topside of the surface using optional ADHB-4 mounting brackets. For part number information, see “USB connection indication.” on page 15.

### Underside Mounting

To install the ADHB-4 on the desk underside, do the following:

1. Remove the top screws (B), from the sides of the ADHB-4.
2. Using the screws removed in step 1, attach the brackets (A) to the sides of the ADHB-4 as shown in Figure 4.
3. Hold the ADHB-4 in the desired mounting position.
4. Using a pencil, mark hole positions on the mounting surface.
5. Drill holes to accept a #4-40 x 1/4” screw (C).
6. Using the screws (C) supplied with the bracket, attach the ADHB-4 to the mounting surface.

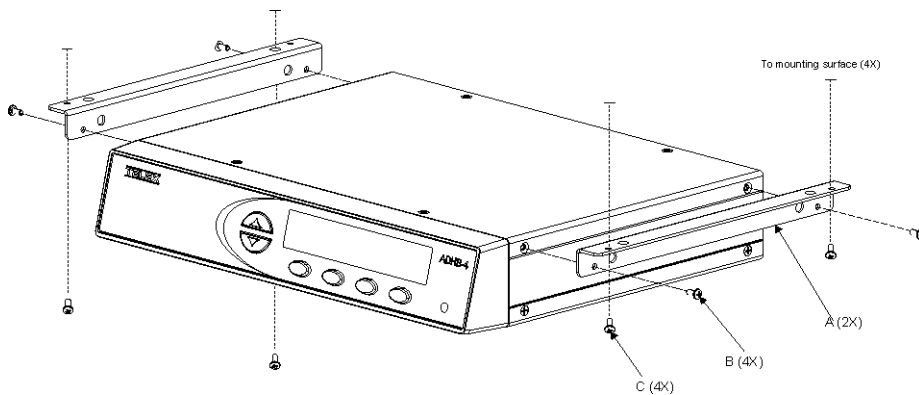


FIGURE 4. ADHB-4 Underside Mounting

## Topside Mounting

To install the ADHB-4 on the desk topside, do the following:

1. Remove the top screws (F) from the sides of the ADHB-4.
2. Using the screws removed in step 1, attach the **brackets** (D) to the sides of the ADHB-4, as shown in Figure 5.
3. Place the **ADHB-4** in the desired mounting position.
4. Using a pencil, mark **hole positions** on the mounting surface.
5. Drill **holes** to accept a #4-40 x 1/4" screw (E).
6. Using the screws (E) supplied with the bracket, attach the **ADHB-4** to the mounting surface.

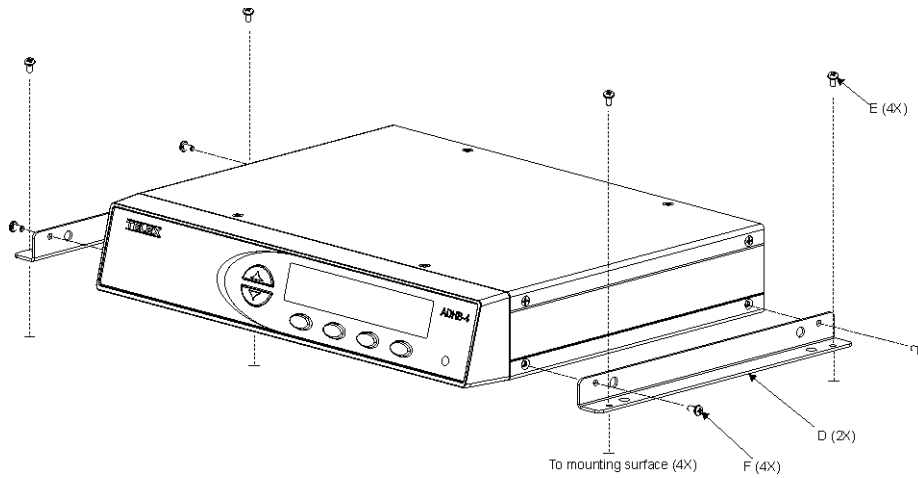


FIGURE 5. ADHB-4 Topside Mounting

## ADHB-4 Connections

### USB Port

The **USB** port is used to connect the ADHB-4 directly to a PC. The USB connection is required to send the audio and control data between C-Soft and the ADHB-4.

**IMPORTANT:** If it is necessary to disconnect the USB from the computer or ADHB-4, the USB device should be safely removed.

To safely disconnect the **USB from the computer**, do the following:

1. Close the **C-Soft** console.
2. Take steps in Windows to safely remove **hardware**.

**REFERENCE:** For more information, see your operating system user manual.

3. Disconnect the **USB** from the computer and ADHB-4.

### 10/100 NETWORK Port

The **NETWORK** port is used to connect an network cable to the ADHB-4.

### PHONE Jack

The **PHONE** jack is used to connect a **POTS** (Plain Old Telephone Service) phone fitted with a mini RJ 4-pin-connector, to the ADHB-4.

To connect to a phone system, do the following:

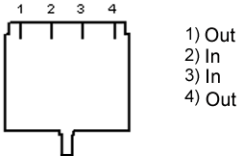
1. Remove the **handset** from the phone (at the handset side of the wire) leaving the wire connected to the main phone.
2. Connect the **line** directly to the phone jack.

**NOTE:** The NENA hookswitch is used to activate the phone connectivity.

**TABLE 1.** Phone RJ-12 Connector Pin Outs

Pin Number	Name	Description
1	NENA TX Audio	Handset Microphone
2	NENA RX Audio	Handset Receiver
3	NENA RX Audio	Handset Receiver
4	NENA TX Audio	Handset Microphone



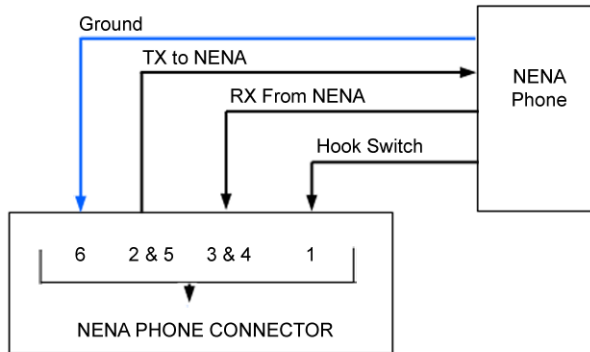
Handset Connector



## NENA Jack

The **NENA** jack is used to connect a NENA phone network with an RJ-12 connector, to the ADHB-4 allowing full duplex conversation. NENA operation is only permitted when headset(s) are selected and detected for use at the dispatch position. The offhook condition is triggered by a contact closure that is part of the NENA jack wiring.

The NENA connector wiring diagram is shown in Figure 6. Pin outs for the RJ-12 connector are shown in Figure 6.



**FIGURE 6.** NENA Phone Connector

### *NENA Phone Connector*

The NENA Phone connector description:

- ADHB-4 connects to NENA line from the RJ-12 connector.
- Balanced 600 Ohm audio in and out to eliminate ground loops.
- Telephone RX audio routed to headset for entire offhook duration.
- Radio RX audio routes to speaker 2 when the telephone goes offhook.
- The hook switch input is diode protected from voltages above 5VDC.

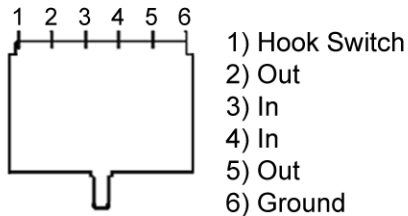
**RJ-12 Connector**

An **RJ-12** connector provides input/output for a NENA port. When the NENA is taken offhook, the input transitions from high to low and NENA RX audio is routed to the active handset or headset's earpiece while NENA TX is routed from the active handset or headset's microphone.

**NOTE:** A headset or handset is required for NENA use. A desk mic cannot be used for a NENA conversation.

**TABLE 2.** NENA RJ-12 Connector Pin Outs

Pin Number	Name	Description
1	Hook Switch	Diode Protected Contact Closure to Ground.
2	NENA TX Audio	With Pin 5 Balanced 600 Ohm Output 0dB (Nominal).
3	NENA RX Audio	With Pin 4 Balanced 600 Ohm Input 0dB (Nominal).
4	NENA RX Audio	With Pin 3 Balanced 600 Ohm Input 0dB (Nominal).
5	NENA TX Audio	With Pin 2 Balanced 600 Ohm output 0dB (Nominal).
6	Analog Ground	System Analog Ground.



**NENA Connector**

## FOOTSWITCH Jack

The **FOOTSWITCH** jack accepts a 3-pin connector that has one (1) or two (2) footswitches connected to it. The input for PTT uses pins 1 and 2. The input for monitor uses pins 2 and 3. The PTT footswitch can control the PTT functions for the headset, RHB 1 or 2, or the desk mic depending on the configuration.

### 3-Pin Connector

**TABLE 3.** Foot Switch 3-Pin Connector Pin Outs

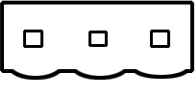
Pin Number	Name	Description
1	PTT	Diode Protected Contact Closure to Ground.
2	GND	DC Ground.
3	Monitor	Diode Protected Contact Closure to Ground.

1

2

3



1) PTT

2) GND

3) Monitor

Footswitch Connector

---

## ACCESSORY Port

The **ACCESSORY** port is used to connect optional equipment, to the ADHB-4.

---

**CAUTION:** The ground connection on the must be connected for proper operation. It provides a path for any external noise to be shunted to.

---

### *Recorder Output*

The ADHB-4 accessory port provides two (2) balanced recorder outputs with 600 Ohms impedance.

- The common recorder output sums and amplifies all common audio to a balanced output.
- The unselect recorder output sums and amplifies all unselect audio to a balanced output.

**NOTE:** The ADHB-4 does not support recording audio routed to speakers 3–6.

### *AUX TTL Level Inputs*

The AUX 1 and AUX 2 connections detect a contact closure and sends the information to the C-Soft application. Each input is diode protected from voltages above +5VDC.

These inputs are:

- DC Isolated
- Diode Protected
- Active Hi/Low (configured in C-Soft)

### *Form C Relay Contacts*

The ADHB-4 provides two (2) Form C relay contacts for general use. Each relay is (separately) controlled from C-Soft. A 1.25Amp resettable fuse protects both sets of contacts.

**DB-15 Connector****TABLE 4.** DB-15 Pin Outs—Accessory Port

Pin Number	Name	Description
1	AUX 1 Input	With Pin 2 or Pin 10 Isolated Aux Input. Diode Protected. +12Vdc Maximum.
2	Iso GND	System Isolated DC Ground.
3	Analog GND	System Analog Ground.
4	Relay 1 N. O.	Relay Normally Open Contact 2A 30Vdc.
5	Common Recorder Output (+)	Web Browser Configured. See “Common Record Vol Slider” on page 49.
6	Common Recorder Output (-)	Web Browser Configured. See “Common Record Vol Slider” on page 49.
7	Unselect Recorder Output (+)	Web Browser Configured. See “Unselect Record Vol Slider” on page 49.
8	Unselect Recorder Output (-)	Web Browser Configured. See “Unselect Record Vol Slider” on page 49.
9	AUX 2 Input	With Pin 2 or Pin 10 Isolated Aux Input. Diode Protected. +12Vdc Maximum.
10	Iso GND	System Isolated DC Ground.
11	Relay 1 N. C.	Relay Normally Closed Contact 2A. 30Vdc.
12	Relay 1 Common	Relay Common Contact 2A 30Vdc.
13	Relay 2 N. C.	Relay Normally Closed Contact 2A 30Vdc.
14	Relay 2 N. O.	Relay Normally Open Contact 2A 30Vdc.
15	Relay 2 Common	Relay Common Contact 2A 30Vdc.
<p>DB15 Connector</p>		

## REMOTE HEADSET (1 and 2) Connectors

The **REMOTE HEADSET (1 and 2)** connectors are used to connect RHB's. The RHB ships with a DB-9 (male) to DB-9 (female) cable. Pin outs are shown in Table 5 on page 30.

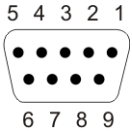
**NOTE:** For more information, see "Remote Headset Box" on page 85.

**TABLE 5.** DB-9 Pin Outs

Pin Number	Name	Description
1	Unselect Audio Output	Unselect Audio Output
2	Analog GND	System Analog Ground
3	Analog GND	System Analog Ground
4	Select Audio Output	Select Audio Output
5	Microphone In	Electret Microphone Input
6	PTT	Diode Protected Contact Closure to Ground
7	12Vdc	100mA Resettable Fuse Protected
8	PTT Control	TTL Level PTT Indication 0 = No PTT/1 = PTT
9	N/C	

**DB9  
Connector**



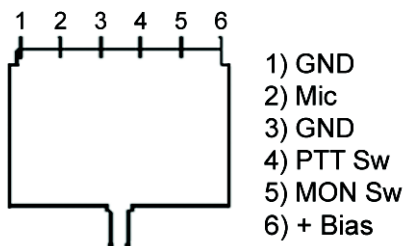
## DESK MIC Jack

The **DESK MIC** jack is used to connect an electret or dynamic desk mic with an RJ-12 connector, to the ADHB-4. The RJ-12 modular jack is designed specifically for Bosch microphone models: MD2000 (electret element) or model 6513 (dynamic element); however, any microphone conforming to the input amplifier specifications may be wired for use.

If an electret microphone is used, a DC bias is placed on the microphone connection to power the microphone.

The nominal audio input levels are *500mv P-P* for an electret and or *10-20mv P-P* for a dynamic element.

### *RJ12 Connector*



**Desk Mic Connector**

**FIGURE 7.** RJ-12 Pin Outs — Desk Mic Jack

---

## MIC (XLR) Connector

The **MIC (XLR)** connector, on the side panel, is used to connect a 3-pin XLR-fitted microphone to the ADHB-4. The XLR microphone input stage is designed for any standard balanced low impedance dynamic microphone.

A phantom power supply of +48VDC is available for microphones that require power. The +DC is equally applied to pins 2 and 3 of the connector with reference to pin 1 (ground). Phantom power to the XLR jack is set in the configuration windows. This type of connector does not provide PTT. PTT must be initiated from either C-Soft or a footswitch.

The nominal input level is *10-20mv P-P*.

## SPEAKERS Jacks (1–2, 3–4, 5–6)

The **SPEAKERS** jacks are used to connect self-powered 8 Ohm computer speaker pairs to the ADHB-4.

### *Speaker default settings:*

**Speaker 1** is dedicated to Select audio.

- If any headset is detected at this console position, Select audio is routed to the headsets and not speaker 1.
- C-Soft provides the ability to set the audio to route to speaker 1 as well as the headset.
- If a desk mic is selected for use and no headset is present, Select audio is routed to Speaker 1.

**Speaker 2** is dedicated to Unselect audio.

**Speakers 3–6** (positional speakers) are used to monitor Unselect audio.

- C-Soft provides the ability to route a single or multiple Unselect audio stream from a C-Soft line(s) to the speakers.
- These speakers are not recorded.

**REFERENCE:** For more information, see the C-Soft Software Console Administrator's Guide (P/N F.01U.218.561).

## POWER Jack

The **POWER** jack is used to connect power to the unit via a 2.5mm center positive plug. The power requirements are 12VDC to 16VDC, 500mA.

---

**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.

---

## HEADSET Jack

The **HEADSET** jack is used to connect a 4- or 6-wire headset fitted with a dual channel 1/4" plug. This headset is known as the controller headset.

---

## Connect ADHB-4 Hardware

To make hardware connections to the ADHB-4, do the following:

1. Connect the **10/100 Network** cable to the IP Network and the ADHB-4.
2. Connect a **speaker pair** to the SPEAKER 1–2 jack.
3. Connect an **RJ-12 desk mic** to the DESKMIC jack.  
OR  
Connect an **XLR desk mic** to the XLR jack on the side panel.  
OR  
Connect a headset with a dual channel 1/4" plug to the HEADSET jack on the side panel of the unit, aligning the **polarity hash marks** on the panel with the headset connector grooves.

**NOTE:** The DISH series headset connector hash marks are reversed, i.e. the connector's hash marks must be rotated 180° from the hash marks on the ADHB-4 before inserting it into the jack.

4. Connect optional **audio devices**:
  - NENA line to the NENA jack.
  - Footswitch to the FOOTSWITCH jack.
  - Recorder/accessory to the ACCESSORY port.
  - Speaker pair(s) to the SPEAKER 3–4, or 5–6 jack.
  - Install RHB(s) to the REMOTE HEADSET 1 and/or 2 ports.

**NOTE:** For more information, see "RHB Installation" on page 88.

5. Ensure **power** is supplied to the speaker pair(s).
6. Ensure the **speaker volume** and **headset volume** are turned to an audible level.

### IMPORTANT:

- Do not connect the ADHB-4 to power until after C-Soft installation.
- Do not connect the USB cable to the PC until after C-Soft Installation.

---

## C-Soft Installation

The **C-Soft installation** is described in the C-Soft Software Console Administrator's Guide (P/N F.01U.218.561) available on the CD that ships with the ADHB-4 or can be downloaded at [www.telexradiodispatch.com](http://www.telexradiodispatch.com).

**IMPORTANT:** Before C-Soft installation, ensure the USB is not connected to the ADHB-4.

---

## ADHB-4 Driver Installation

The **ADHB-4 Driver** installation process begins after a USB connection to the PC is established. Since the installation requires access to the usb\_drivers folder, which is included in the C-Soft installation folder, C-Soft must be installed before the ADHB-4 driver.

- PCs running Windows XP install C-Soft and the ADHB-4 driver separately. See "Install the ADHB-4 Driver with Windows XP" on page 35.
- PCs running Windows 7 install the ADHB-4 driver right after C-Soft is installed. See "Install the ADHB-4 Driver with Windows 7" on page 33.

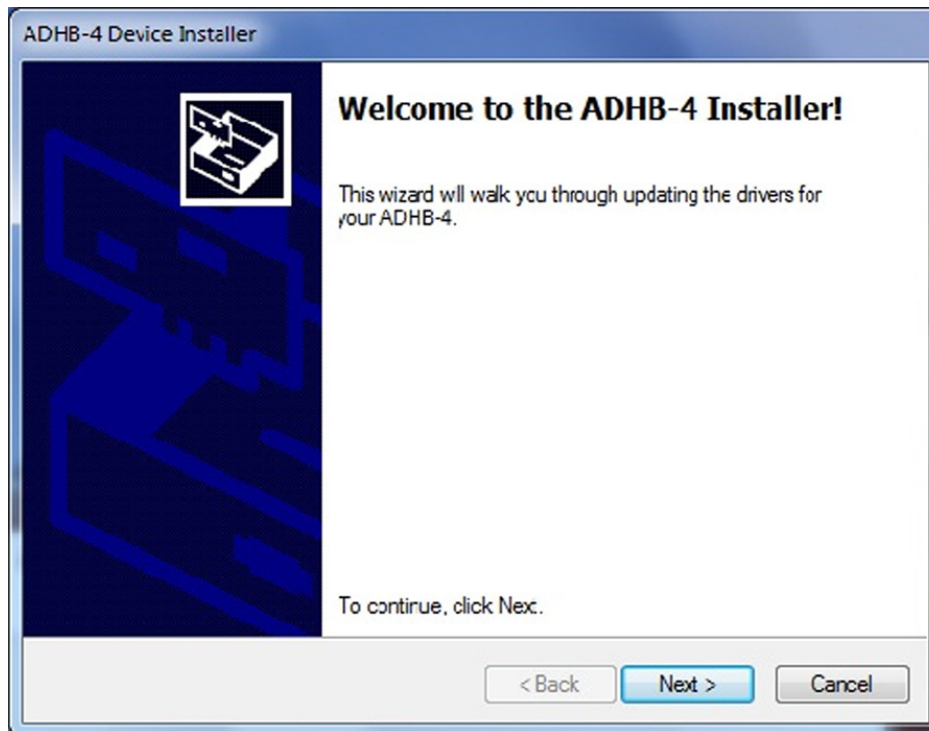


## Install the ADHB-4 Driver with Windows 7

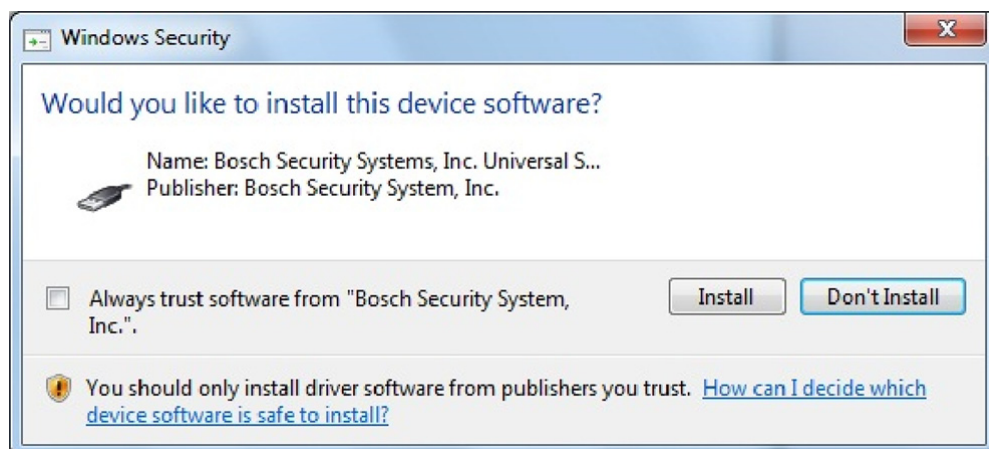
The **Windows 7** driver installation wizard appears right after installing the new version of C-Soft.

To **install ADHB-4 driver on PCs running Windows 7**, do the following:

1. From the ADHB-4 installation wizard Welcome window, click **Next**.



2. From the Windows Security window, click **Install**.



3. From the Congratulations window, click **Finish**.



## Install the ADHB-4 Driver with Windows XP

Once the ADHB-4 hardware connections, including the USB connection to the PC, are complete the Found New Hardware wizard appears.

To **install the ADHB-4 Driver with Windows XP**, do the following:

**NOTE:** The wizard appears when a USB connection from the ADHB-4 to the PC is established. If necessary, the USB connection can be unplugged and replugged to reopen the driver installation wizard.

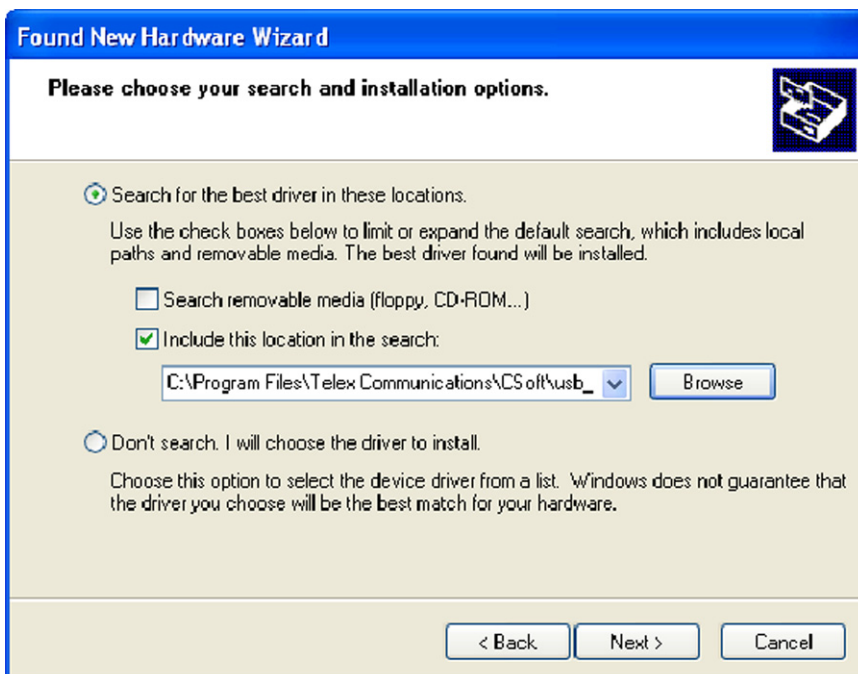
1. Ensure the **current version of C-Soft** is installed on the PC.
1. From the wizard's Welcome window, select the **No, not this time** radio button.
2. Click **Next**.



- From the This wizard helps you install software for: ADHB-4 window, select the **Install from a list or specific location (Advanced)** radio button.
- Click **Next**.



- From the Please choose your search and installation options window, select the **Include this location in the search** check box.

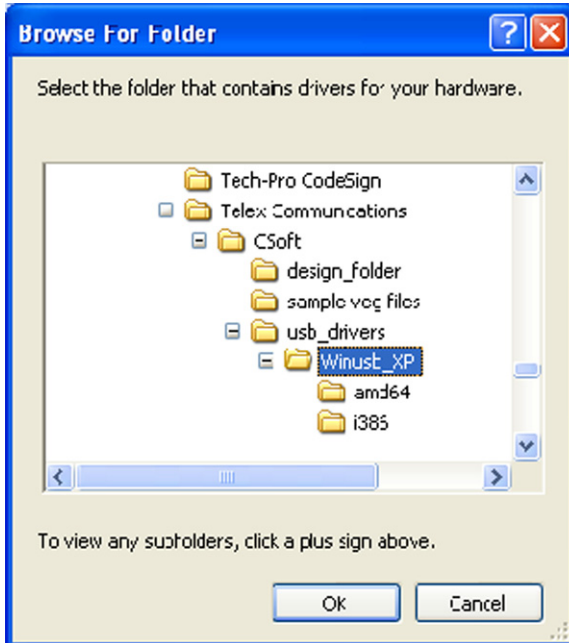


- Click **Browse**.

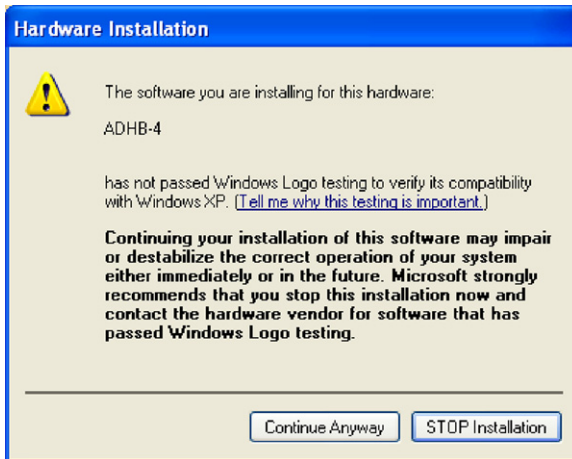
- From the Browse For Folder window, select C:\Program Files\Telex Communications\CSoft\usb\_drivers\Winusb\_XP.

**NOTE:** If this folder is not available you need to install the current version of C-Soft.

- Click **OK**.



- From the Hardware Installation window, click **Continue Anyway**.  
*The wizard takes a few minutes to install the software.*



10. From the Completing the Found New Hardware Wizard, click **Finish**.  
*The Wizard closes and the ADHB-4 driver is installed.*



### Apply Power to the ADHB-4

Power can now be safely applied to the ADHB-4.

To **apply power**, do the following.

- > Connect **power** to the ADHB-4.  
*The system information appears momentarily, then normal operation mode appears.*

### Connect the USB Cable

The ADHB-4 can now be connected to the PC.

To **connect the USB cable**, do the following:

- > Connect one end of the provided **USB cable** to a PC and the other end to the ADHB-4.  
*USB displays in the upper right corner to indicate a connection to a PC*

---

### *Web Browser Configuration*

The ADHB-4 uses a web browser to configure the device. The position name, firmware version, and links are visible from every configuration window. The second level navigation links is used to collapse the view to display individual sections at a time.

#### **Submit Button**

The **Submit** button, at the bottom of each configuration window, is used to temporarily save changes to the ADHB-4.

To **permanently save changes**, do the following:

1. Click **Submit**.
2. From the left navigation pane, click the **Save Parameters** link.
3. Click **Save Parameters**.

*The configuration is saved to the ADHB-4.*



## Home Link

The **Home** link, located in the left navigation pane, is used to open the Home window. The Home window contains a description and contact information.



**TELEX**  
Radio Dispatch

Position Name: Telex ADHB-4      Firmware: 1.003

Welcome to Telex Radio Dispatch Beacon Series "ADHB-4" GUI Interface. The ADHB-4 is our part of our next generation of radio dispatch headset adaptor, it is exclusively designed for use with our C-Soft Console. This provides the dispatcher with a State of the Art audio interface for both input and output.

**BEACON**

**Customer Service - Central Contact**  
8601 East Cornhusker Hwy.  
Lincoln, NE 68507 USA  
Tel [800-553-5992](tel:800-553-5992)  
Fax 402-467-3279  
email: [lincoln.asa@us.bosch.com](mailto:lincoln.asa@us.bosch.com)

**Technical Support - Central Contact**  
Radio Dispatch & Signalling  
8601 East Cornhusker Hwy.  
Lincoln, NE 68507  
Tel 800-898-6723  
email: [telexdispatchtechsupport@us.bosch.com](mailto:telexdispatchtechsupport@us.bosch.com)  
Web: <http://www.telex.com/RadioDispatch>

For help or documentation, please refer to the User Manual or [click here](#).

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FIGURE 8. Home Window



## Account Management Window

The **Account Management** window, see Figure 9, is used to change the administrator's account password.

To reset the password to the default, see "System Info Menu" on page 76.

The screenshot shows the TELEX ADHB-4 configuration interface. At the top, there is a header with the TELEX Radio Dispatch logo, a device image, and three small photos of people. Below the header, the main content area is titled "CHANGE PASSWORD". On the left, there is a navigation menu with options: Home, Account Management (selected), Change Password (selected), Additional Features, Ethernet Setup, Gain Setup, System Setup, System Status, and Save Parameters. The main form contains the following fields:

- Username:** A grayed-out text box containing the text "admin".
- Password:** An empty text box.
- New Password:** An empty text box.
- Confirm Password:** An empty text box.
- Submit:** A button located below the Confirm Password field.

At the bottom of the interface, there is a footer with the text: "© Copyright 2010 Bosch Security System, Inc. All Rights Reserved."

FIGURE 9. Account Management Window

## CHANGE PASSWORD

### Username Field

The **Username** field displays *admin*, which is the default and only username allowed for the ADHB-4 account. This field is grayed-out to indicate it cannot be changed.

### Password Field

The **Password** field is used to enter the current admin password.

This field can contain up to *16 characters*.

### New Password Field

The **New Password** field is used to enter a new password.

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

### Confirm Password Field

The **Confirm Password** field is used to re-enter the new password.

## Submit Button

The **Submit** button is used to temporarily save changes to the ADHB-4.

To **change the ADHB-4's password**, do the following:

1. In the Password field, enter the **current password**.
2. In the New Password field, enter a **new password**.
3. In the Confirm Password field, re-enter the **new password**.
4. Click **Submit**.  
*The new password is permanently saved. The message, SUCCESS: Your Password has successfully been changed appears at the top of the window.*
5. From the left navigation pane, click the **Save Parameters** link.
6. Click **Save Parameters**.  
*The configuration is saved to the ADHB-4.*

The screenshot shows the TELEX ADHB-4 web interface. At the top, there is a banner with the TELEX logo and three images of people wearing hard hats. Below the banner, the interface is divided into a left navigation pane and a main content area. The navigation pane includes links for Home, Account Management (with a sub-link for Change Password), Additional Features, Ethernet Setup, Gain Setup, System Setup, and System Status. The main content area displays the following information:

- Position Name: Telex
- Firmware: 0.008
- A yellow success message: **SUCCESS: Your Password has successfully been changed.**
- A form titled "CHANGE PASSWORD" with the following fields:
  - Username: admin
  - Password: (empty)
  - New Password: (empty)
  - Confirm Password: (empty)
- A "Submit" button at the bottom right of the form.

FIGURE 10. Password Change Success Message

**NOTE:** If an error is made, the message: **ERROR: Incorrect password.** shown in Figure 11 appears.

The screenshot shows the TELEX ADHB-4 web interface with an error message. The layout is identical to Figure 10, but with the following differences:

- The success message is replaced by a red error message: **ERROR: Incorrect password.**
- The "CHANGE PASSWORD" form fields (Username: admin, Password, New Password, Confirm Password) and the "Submit" button remain visible below the error message.

FIGURE 11. Password Change Failure Message

## Ethernet Setup Window

The **Ethernet Setup** window, shown in Figure 12, is used to configure the ADHB-4's network parameters. See your network administrator to determine Ethernet Address field values.

**TELEX ADHB-4** Position Name: Marsh Telex ADHB-4 Firmware: 3.600

**BASE IP SETUP**

Use DHCP:

Unit IP Address: 172.19.70.212      DNS Address 1: 0.0.0.0

Subnet Mask: 255.255.0.0      DNS Address 2: 0.0.0.0

Default Gateway: 172.19.100.168      DNS Address 3: 0.0.0.0

**IPv6 SETUP**

IPv6 Enable:

Link Local Address: fe80::20b:7cff:fe70:3b1

Unit IP Address: fd98:2aec:a4d0:f7dc::1234

Subnet Prefix Length: 64

Gateway: fd98:2aec:a4d0:f7dc::1

**TELEX SYSTEM MANAGER SETUP**

	Enable:	Multicast Address:	Incoming Port:	Outgoing Port:	TTL:
System Manager	<input checked="" type="checkbox"/>	233.15.18.22	7635	7636	6

**MISC INFO**

MAC Address: 00:0B:7C:70:03:B1      Serial Number: 565654654

Hardware Version: 2.003      Firmware Version: 3.600

Submit

FIGURE 12. Ethernet Setup Window

## BASE IP SETUP

### Use DHCP Check Box

The **Use DHCP** check box is used to enable the ADHB-4 to automatically obtain the Unit IP Address from the network. Once selected, all other fields on the window are disabled from use.

The default for this field is, *disabled*.

### NOTE:

- The network must support DHCP if DHCP is used.
- Bosch does not recommend enabling DHCP.

### Unit IP Address Field

The **Unit IP Address** field is used to assign a unique static IP Address to the ADHB-4.

The default IP Address is, 192.168.1.150.

### Subnet Mask Field

The **Subnet Mask** field is used to enter the Subnet Mask Address. The Subnet Mask Address is used to distinguish local addresses from addresses that require the use of a gateway to reach. A subnet mask is required when configuring the system for a static IP Address.

The default for this field is, 255.255.0.0.

### Default Gateway Field

The **Default Gateway** field is used to enter the Gateway Address. The Gateway Address is the IP Address for the node used to reach other networks. A Gateway Address is required when configuring the system for a static IP Address.

The default for this field is, 192.168.1.1.

### DNS Address 1–3 Fields

The **DNS Address 1–3** fields are used to enter the **DNS** (Domain Name System) Addresses. This Address points to the DNS server on your network. See your network administrator for these values.

The default for this field is, 0.0.0.0.

To **set up ADHB-4 Ethernet IP**, do the following:

**NOTE:** Contact your network administrator for required values.

1. In the Unit IP Address field, enter the **IP Address** for the ADHB-4.
2. In the Subnet Mask field, enter the **Subnet Mask** for the network.
3. In the Default Gateway field, enter the **Gateway IP Address** of the network node.
4. In the DNS 1–3 fields, enter **DNS Adresse(s)**.
5. Click **Submit**.
6. From the left navigation pane, click the **Save Parameters** link.
7. Click **Save Parameters**.

*The configuration is saved to the ADHB-4.*

### IPv6 Enable Field

The **IPv6 Enable** check box, if selected, allows the IP-224 to be addressed and set up with an IPv6 address format.

### Link Local Address Field

The **Link Local Address** field is a 1288-bit address field. It is not editable. It is an auto-configured address field and starts with FE in hexadecimal. The link local address is used to rough the local network device only and cannot be routed to public networks. The link local address is generated from the local device MAC.

### Unit IP Address Field

The **Unit IP Address** field is used to display or set the unit's IP Address. The web browser configuration uses the IP Address to identify the IP-224 for such operations as set up, software upgrades, and communication on the network. The IPv6 address size is 128-bit. The IPv6 address is represented in hexadecimal format. The 128-bit address is divided in to 16-bits with each 16-bit block is converted to a 4-digit hexadecimal number and separated by colons.

**NOTE:** The Unit IP Address text next to the field is a direct link. Click the text to go directly to the web page configuration on the device.

### Subnet Prefix Length Field

The **Subnet Prefix Length** field is used to identify how many bits of the global IPv6 address are there in the network part. The prefix length in IPv6 can be considered similar to the subnet mask field used in IPv4. However, rather than being expressed in four octets like IPv4, the address is expressed as an integer between 1 and 128.

The default value of this field is 64.

### Gateway Field

The **Gateway** field is used to configure the unit's gateway address. It is used to connect the device to another network.

## TELEX SYSTEM MANAGER SETUP

---

### System Manager Enable Check Box

The **System Manager Enable** check box is used to enable communication between the ADHB-4 and TSM (Telex System Manager). TSM provides a centralized location to configure Telex Radio Dispatch solutions. The ADHB-4 firmware is updated with TSM.

**NOTE:** TSM is a free application that can be downloaded from [www.telexradiodispatch.com](http://www.telexradiodispatch.com)

To enable communication between ADHB-4 and TSM, do the following:

1. From the Ethernet Setup window, select the **System Manager Enable** check box.  
*Communication between the ADHB-4 and TSM is enabled.*
2. Click **Submit**.
3. From the left navigation pane, click the **Save Parameters** link.
4. Click **Save Parameters**.  
*The configuration is saved to the ADHB-4.*

**REFERENCE:** For more information, see the Telex System Manager Technical Manual (P/N F.01U.196.144), available for download at [www.telexradiodispatch.com](http://www.telexradiodispatch.com).

### System Manager Multicast Address Field

The **System Manager Multicast Address** field displays the Multicast Address for TSM.

### System Manager Incoming Port Field

The **System Manager Incoming Port** field displays TSM's incoming port number.

### System Manager Outgoing Port Field

The **System Manager Outgoing Port** field displays TSM's outgoing port number.

### System Manager TTL Field

The **System Manger TTL** field is used to set the number of routers the multicast packets are allowed to pass through before being discarded.

The range for this field is, 1 to 6.

The default for this field is, 6.

---

## MISC INFO

---

### MAC Address Display Text

The **MAC Address** display text indicates the ADHB-4's MAC address.

### Serial Number Display Text

The **Serial Number** display text indicates the ADHB-4's Serial Number.

**NOTE:** The serial number can also be found on the label attached to the bottom of the ADHB-4.

### Kernel Version Display Text

The **Kernel Version** display text indicates the ADHB-4 Software Kernel version.

### Submit Button

The **Submit** button is used to submit changes made to the Ethernet Setup window. Once clicked, the parameters are temporarily saved.

To **permanently save changes**, do the following:

5. Click **Submit**.
6. From the left navigation pane, click the **Save Parameters** link.
7. Click **Save Parameters**.

*The configuration is saved to the ADHB-4.*

## Gain Setup Window

The **Gain Setup** window, shown in Figure 13, is used to configure audio inputs and outputs.

**NOTE:** Each option on this page is adjusted with a slider.

To **adjust the gain sliders**, do the following:

1. Use either a mouse or keyboard arrow keys to move the **slider** in 0.5dB increments to the desired level.
2. Click **Submit**.
3. From the left navigation pane, click the **Save Parameters** link.
4. Click **Save Parameters**.

*The configuration is saved to the ADHB-4.*

**TELEX ADHB-4** Position Name: Marsh Telex ADHB-4 Firmware: 3,600

**MICROPHONE INPUT GAINS**

Headset Mic: <input type="range" value="0"/> 0 dB	RJB12 Desk Mic: <input type="range" value="0"/> 0 dB
RHB 1 Mic: <input type="range" value="0"/> 0 dB	XLR Desk Mic: <input type="range" value="0"/> 0 dB
RHB 2 Mic: <input type="range" value="0"/> 0 dB	

**MICROPHONE INPUT NOISE THRESHOLD**

Headset Mic: <input type="range" value="0"/> 0	RJB12 Desk Mic: <input type="range" value="0"/> 0
RHB 1 Mic: <input type="range" value="0"/> 0	XLR Desk Mic: <input type="range" value="0"/> 0
RHB 2 Mic: <input type="range" value="0"/> 0	

**NENA GAINS**

NENA Input: <input type="range" value="0"/> 0 dB	NENA Output: <input type="range" value="0"/> 0 dB
--	---

**RECORDER OUTPUT GAINS**

Common Record Vol: <input type="range" value="0"/> 0 dB	Unselect Record Vol: <input type="range" value="0"/> 0 dB
---	---

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FIGURE 13. Gain Setup Window

---

## MICROPHONE INPUT GAINS

---

When a microphone input gain slider is moved, it increments by 0.5db. However, once the settings are saved, negative settings increment by 1.5dB.

**EXAMPLE:** If the RJ12 slider is set to -1dB and submit is clicked, a success message appears and the RJ-12 is set to -1.5dB.

### RJ12 Desk Mic Slider

The **RJ12 Desk Mic** slider is used to configure the input level for an RJ-12 desk mic.

The range for this field is *-12dB* to *20dB*.

### Headset Mic Slider

The **Headset Mic** slider is used to configure the input level for a headset mic.

The range for this field is *-12dB* to *20dB*.

### XLR Desk Mic Slider

The **XLR Desk Mic** slider is used to configure the input level for an XLR desk mic.

The range for this field is *-12dB* to *20dB*.

---

## MICROPHONE INPUT NOISE THRESHOLD

---

### RJ12 Desk Mic Slider

The **RJ12 Desk Mic** slider is used to control the noise tolerance of the ADHB-4 when an RJ12 desk microphone is connected. A higher value indicates a higher noise tolerance at the expense of audio quality.

The range for this field is *0* to *10*.

### Headset Mic Slider

The **Headset Mic** slider is used to control the noise tolerance of the ADHB-4 when a headset is connected. A higher value indicates a higher noise tolerance at the expense of audio quality.

The range for this field is *0* to *10*.

### XLR Desk Mic Slider

The XLR Desk Mic slider is used to control the noise tolerance of the ADHB-4 when an XLR desk microphone is connected. A higher value indicates a higher noise tolerance at the expense of audio quality.

The range for this field is *0* to *10*.

---

## NENA GAINS

---

### NENA Input Slider

The **NENA Input** slider is used to configure the input level for a NENA line.

The range for this field is *-12dB* to *20dB*.



---

## NENA Output Slider

The **NENA Output** slider is used to configure the output level for a NENA line.

The range for this field is *-30dB* to *9dB*.

---

## RECORDER OUTPUT GAINS

---

### Common Record Vol Slider

The **Common Record Vol** slider is used to configure the volume gain for the common recorder. The common recorder output is a summation of any active audio in the dispatch position. Common audio sources include: Select, Unselect (optional), PTT TX, NENA TX (optional), and NENA RX (optional).

The range for this field is *-30dB* to *9dB*.

### Unselect Record Vol Slider

The **Unselect Record Vol** slider is used to configure the volume gain for the Unselect recorder. This recorder output is Unselect audio transmitted from C-Soft to the ADHB-4.

**NOTE:** This slider does not affect audio sent to speakers 3–6.

The range for this field is *-30dB* to *9dB*.

### Submit Button

The **Submit** button is used to submit changes made to the Gain Setup window. Once clicked, the new configuration is temporarily saved.

To **permanently save changes**, do the following:

1. Click **Submit**.
2. From the left navigation pane, click the **Save Parameters** link.
3. Click **Save Parameters**.

*The configuration is saved to the ADHB-4.*

## System Setup Window

The **System Setup** window, shown in Figure 14 and Figure 15, is used to enable and configure audio resources.

TELEX ADHB-4 Position Name: Marsh Telex ADHB-4 Firmware: 3.600

Submit

**POSITION NAME SETUP**

Name:

**DESK MIC SETUP**

Model:

Connector:  Type:  Phantom Power:

**HEADSET SETUP**

Controller Headset:   Controller Headset Audio:

RHB 1 Headset:   RHB 1 Audio:

RHB 2 Headset:   RHB 2 Audio:

**CONSOLE GENERATED PTT SETUP**

	#1	#2	#3	#4	Disable
Headset Mic	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RHB 1 Mic	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RHB 2 Mic	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Desk Mic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

FIGURE 14. System Setup Window—View 1

## POSITION NAME SETUP

### Name Field

The **Name** field is used to assign the ADHB-4 unit a user-recognizable name.

This field can contain up to *39 alphanumeric characters*.

## DESK MIC SETUP

The **Desk Mic Setup** section is used to configure the desk mic type and power requirements. A PTT can be generated from C-Soft or a footswitch for desk mics that require an external PTT.

### Model Drop Down Menu

The Model drop down menu is used to select the desk mic model.

Available options are Telex 6513C, Telex DT-GN, Telex MD-MS (DM2000), Telex PREMDESKMIC, EV PolarChoice, and Other.

### Connector Drop Down Menu

The **Connector** drop down menu is used to configure the desk mic connector type. The ADHB-4 supports desk mics with either an RJ-12 or an XLR connector. Once the type is selected, the Mic type drop down menu options are updated to correspond with the selected connector type.

Available selections for this field are: *RJ12* and *XLR*.

## Mic Type Drop Down Menu

The **Mic Type** drop down menu is used to configure the desk mic type. The ADHB-4 supports dynamic and electret desk mics.

Available selections for this field when RJ12 is selected are: *Dynamic* and *Electret*.

Available selection for this field when XLR is selected is: *Dynamic*.

## Phantom Power Drop Down Menu

The **Phantom Power** drop down menu appears when the mic connector type is set to XLR. Use this field to toggle on or off power supplied to the XLR microphone.

Available selections for this field are: *On* and *Off*.

To **turn on XLR phantom power**, do the following:

1. From the Mic Connector drop down menu, select **XLR**.  
*The Phantom Power drop down menu appears. The Mic Type menu defaults to Dynamic.*
2. From the Phantom Power drop down menu, select **ON**.  
*The red LED on the side of the ADHB-4 indicates power is on.*
3. Click **Submit**.
4. From the left navigation pane, click the **Save Parameters** link.
5. Click **Save Parameters**.  
*The configuration is saved to the ADHB-4.*

## HEADSET SETUP

The **Headset Setup** section is used to configure headset type and audio channel selection. A 4-wire headset with no PTT, or a 6-wire headset with PTT, can be configured for use.

### RHB 1 Headset Drop Down Menu

The **RHB 1 Headset** drop down menus are used to configure the audio type and whether or not PTT is available on RHB 1's headset.

**NOTE:** RHB 1 is connected to the REMOTE HEADSET 1 jack on the back panel.

Available selections for these fields are: *Mono* and *Stereo* or, *No PTT* and *PTT*.

### RHB 2 Headset Drop Down Menu

The **RHB 2 Headset** drop down menus are used to configure the audio type and whether or not PTT is available on RHB 2's headset.

**NOTE:** RHB 2 is connected to the REMOTE HEADSET 2 jack on the back panel.

Available selections for these fields are: *Mono* and *Stereo*, or *No PTT* and *PTT*.

### Controller Headset Drop Down Menu

The **Controller Headset** drop down menu is used to configure the headset type and whether or not PTT is available on the RHB 2's headset connected to the ADHB-4.

Available selections for this field are: *Mono* and *Stereo*, or *No PTT* and *PTT*.

## RHB 1 Audio Drop Down Menu

The **RHB 1 Audio** drop down menu is used to configure RHB 1 to capture audio originating from C-Soft's Select audio or Select audio and Unselect audio. For mono-configured headsets, the audio is limited to Select only. For stereo-configured headsets, the headset can play select audio only, or both select and unselect audio.

Available selections for this field are: *SEL Audio Only* and *SEL &UNSEL Audio*.

## RHB 2 Audio Drop Down Menu

The **RHB 2 Audio** drop down menu is used to configure RHB 2 to capture audio originating from C-Soft's Select audio or Select audio and Unselect audio. For mono-configured headsets, the audio is limited to Select only. For stereo-configured headsets, the headset can play select audio only, or both select and unselect audio.

Available selections for this field are: *SEL Audio Only* and *SEL &UNSEL Audio*.

## Controller Headset Audio Drop Down Menu

The **Controller Headset Audio** drop down menu is used to configure the ADHB-4 to capture audio originating from C-Soft's Select audio or Select audio and Unselect audio. For mono-configured headsets, the audio is limited to Select only. For stereo-configured headsets, the headset can play select audio only, or both select and unselect audio.

Available selections for this field are: *SEL Audio Only* and *SEL &UNSEL Audio*.

## CONSOLE GENERATED PTT

The **Console Generated PTT** section is used to configure microphone source priorities when a PTT is generated from the console position. Up to four (4) different microphone sources can be set up for a console generated PTT. When the console operator performs a PTT from the C-Soft console, the first available microphone source that is not disabled or disconnected, is selected for transmission in the order set up in this section.

The default for these fields are:

*Headset Mic #1*

*RHB 1 #2*

*RHB 2 #3*

*Desk Mic #4*

### NOTE:

- The ADHB-4 Global window can be used by the console operator to select the audio source. When the Mic Select Enable check box is selected, the priority settings on the System Setup window are overridden. See "Mic Select Enable Check Box" on page 82 for more information.
- Because the desk mic cannot be detected, the ADHB-4 always assumes a desk mic is connected.

**EXAMPLE:** When the defaults are set, audio is captured as follows:

If a headset, and RHB 1, and RHB 2 and desk mic are connected, and a PTT is generated from C-Soft, audio is captured from the headset's microphone.

If an RHB 1, an RHB 2, and a desk mic are connected, and a PTT is generated from C-Soft, audio is captured from the RHB 1 headset's microphone.

If an RHB 2 and a desk mic are connected, and a PTT is generated from C-Soft, audio is captured from the RHB 2 headset's microphone.

**Headset Mic #1–#4 Radio Buttons**

The **Headset Mic #1–#4** radio button indicates the priority for routing audio through the (controller) headset when a PTT is generated from C-Soft.

**Headset Mic Disable Radio Button**

The **Headset Mic Disable** radio button indicates the headset is ignored when a PTT is generated from C-Soft.

**RHB 1 Mic #1–#4 Radio Buttons**

The **RHB Mic #1–#4** radio button indicates the priority for routing audio through the RHB 1 when a PTT is generated from C-Soft.

**RHB 1 Mic Disable Radio Button**

The **RHB 1 Mic Disable** radio button indicates the RHB 1 is ignored when a PTT is generated from C-Soft.

**RHB 2 Mic #1–#4 Radio Buttons**

The **RHB 2 Mic #1–#4** radio button indicates the priority for routing audio through the RHB 2 when a PTT is generated from C-Soft.

**RHB 2 Mic Disable Radio Button**

The **RHB 2 Mic Disable** radio button indicates the RHB 2 is ignored when a PTT is generated from C-Soft.

**Desk Mic #1–#4 Radio Buttons**

The **Desk Mic #1–#4** radio button indicates the priority for routing audio through the desk mic when a PTT is generated from C-Soft.

**NOTE:** Because the desk mic cannot be detected, the ADHB-4 always assumes a desk mic is connected.

**Desk Mic Disable Radio Button**

The **Desk Mic Disable** radio button indicates the desk mic is ignored when a PTT is generated from C-Soft.

**FOOTSWITCH PTT SETUP**

	#1	#2	#3	#4	Disable
Headset Mic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RHB 1 Mic	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RHB 2 Mic	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Desk Mic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

**NENA/PHONE MIC SOURCE SETUP**

	#1	#2	#3	Disable
Headset Mic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RHB 1 Mic	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
RHB 2 Mic	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

**PTT PRIORITY SETUP**

	#1	#2	#3	#4	#5	#6	No Priority
Headset PTT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
RHB 1 PTT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
RHB 2 PTT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Desk Mic PTT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Footswitch PTT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Console Generated PTT	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**RECORDER SETUP**

Common Record:  SEL  UNSEL  NENA

**SYSTEM PARAMETERS SETUP**

Change IP On Display:       Clock Update:  sec      LCD Backlight:

Min. Headset Volume:  ▾

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FIGURE 15. System Setup Window—View 2

## FOOTSWITCH PTT SETUP

The **Footswitch PTT Setup** section is used to configure microphone source priorities when a PTT is generated from a footswitch connected to the ADHB-4. Up to four (4) different microphone sources can be set up for a footswitch generated PTT. When the console operator presses the footswitch, the first available microphone source, that is not disabled or disconnected, is selected for transmission in the order setup in this section.

The default for these fields are:

*Headset Mic #1*

*RHB 1 #2*

*RHB 2 #3*

*Desk Mic #4*

### NOTE:

- The ADHB-4 Global window can be used by the console operator to select the audio source. When the Mic Select Enable check box is selected, the priority settings on the System Setup window are overridden. See “Mic Select Enable Check Box” on page 82 for more information.
- Because the desk mic cannot be detected, the ADHB-4 always assumes a desk mic is connected.

**EXAMPLE:** When the defaults are set, the captured audio is routed as follows:

If a headset, an RHB 1, an RHB 2 and desk mic are connected, and a PTT is generated from the footswitch, audio is captured from the headset's microphone.

If an RHB 1, an RHB 2, and a desk mic are connected, and a PTT is generated from the footswitch, audio is captured from the RHB 1 headset's microphone.

If an RHB 2 and a desk mic are connected, and a PTT is generated from the footswitch, audio is captured from the RHB 2 headset's microphone.

### **Headset Mic #1–#4 Radio Buttons**

The **Headset Mic #1–#4** radio buttons indicate the priority for routing audio through the headset when a footswitch PTT is generated.

### **Headset Mic Disable Radio Button**

The **Headset Mic Disable** radio button indicates the headset is ignored when a footswitch PTT is generated.

### **RHB 1 Mic #1–#4 Radio Buttons**

The **RHB 1 Mic #1–#4** radio buttons indicate the priority for routing audio through the RHB 1 when a footswitch PTT is generated.

### **RHB 1 Mic Disable Radio Button**

The **RHB 1 Mic Disable** radio button indicates the RHB 1 is ignored when a footswitch PTT is generated.

### **RHB 2 Mic #1–#4 Radio Buttons**

The **RHB 2 Mic #1–#4** radio buttons indicate the priority for routing audio through the RHB 2 when a footswitch PTT is generated.

### **RHB 2 Mic Disable Radio Button**

The **RHB 2 Mic Disable** radio button indicates the RHB 2 is ignored when a footswitch PTT is generated.

### **Desk Mic #1–#4 Radio Buttons**

The **Desk Mic #1–#4** radio buttons indicate the priority for routing audio through the desk mic when a footswitch PTT is generated.

**NOTE:** Because the desk mic cannot be detected, the ADHB-4 always assumes a desk mic is connected.

### **Desk Mic Disable Radio Button**

The **Desk Mic Disable** radio button indicates the desk mic is ignored when a footswitch PTT is generated.

## NENA/PHONE MIC SOURCE SETUP

The **NENA/PHONE MIC SOURCE SETUP** section is used to configure microphone source priorities when a NENA/phone line is active on the ADHB-4. Up to three (3) different microphone sources can be set up. Once the NENA/phone is taken offhook (low), the ADHB-4 transmits full-duplex audio to the NENA/phone line. When the NENA line is offhook, the priorities are used by the capturing device so PTT is not needed.

- A NENA/phone cannot operate without headsets configured for use at the console position.
- PTT can be used on any of the PTT sources during a NENA call. During this PTT event, the NENA call is placed on hold and regular radio PTT takes over.
- NENA audio continues to be heard on the headset; the microphone captures the audio and routes it to the radio.
  - During a NENA offhook event, no PTT is necessary to talk on the active microphone.

**NOTE:** The ADHB-4 Global window can be used by the console operator to select the audio source. When the Mic Select Enable check box is selected, the priority settings on the System Setup window are overridden. See “Mic Select Enable Check Box” on page 82 for more information.

The default for these fields is:

*Headset Mic #1*

*RHB 1 #2*

*RHB 2 #3*

**EXAMPLE:** When the defaults are set, the audio is routed as follows:

If a headset, an RHB 1, and an RHB 2 connected, and the NENA/Phone is taken offhook, audio is captured from the controller headset’s microphone.

If an RHB 1 and an RHB 2 are connected, and the NENA/phone is taken offhook, audio is captured from the RHB 1 headset’s microphone.

If an RHB 2 is connected, and the NENA/phone is taken offhook, audio is captured from the RHB 2 headset’s microphone.

### Headset Mic #1–#4 Radio Buttons

The **Headset Mic #1–#4** radio buttons indicate the priority when the NENA is offhook with no PTT.

### Headset Mic Disable Radio Button

The **Headset Mic Disable** radio button indicates the headset is disabled from routing audio when the NENA is offhook.

### RHB 1 Mic #1–#4 Radio Buttons

The **RHB 1 Mic #1–#4** radio buttons indicate the priority for capturing audio on the RHB1’s headset while NENA is offhook.

### RHB 1 Mic Disable Radio Button

The **RHB 1 Mic Disable** radio button indicates the RHB 1 is disabled from capturing audio when the NENA is offhook.

### RHB 2 Mic #1–#4 Radio Buttons

The **RHB 2 Mic #1–#4** radio buttons indicate the priority for capturing audio on the RHB 2’s headset while NENA is offhook.

### RHB 2 Mic Disable Radio Button

The **RHB 2 Mic Disable** radio button indicates the RHB 2 is disabled from capturing audio when the NENA is offhook.



## PTT PRIORITY SETUP

The **PTT Priority Setup** section is used to set up the priorities of different PTT sources from the ADHB-4. The highest priority is #1, the lowest is #6.

### NOTE:

- The ADHB-4 Global window can be used by the console operator to select the audio source. When the Mic Select Enable check box is selected, the priority settings on the System Setup window are overridden. See “Mic Select Enable Check Box” on page 82 for more information.

### Console Generated PTT Radio Button

The **Console Generated PTT** radio button is, by default, always set to #1 priority. This setting cannot be changed.

**EXAMPLE:** When the PTT priority is set up as follows:

Console Generated PTT	#1
Headset PTT	#2
RHB 1 PTT	#3
RHB 2 PTT	No priority
Desk Mic PTT	#4

If a PTT is generated from the headset, and RHB 1 is currently engaged in a PTT event, the headset takes control from RHB 1.

If a PTT is generated from RHB 1 while the headset is currently engaged in a PTT event, RHB 1 is ignored.

If a PTT is generated from RHB 1 while the desk mic is engaged in a PTT event, the RHB 1 takes control from the desk mic.

### Headset PTT #1–#6 Radio Buttons

The **Headset PTT #1–#6** radio buttons indicates the priority for a PTT.

Headset PTT No Priority Radio Button

The **Headset PTT No Priority** radio button indicates the headset has the lower priority of any PTT source set to this level and is handled on a first come, first serve basis.

The Headset PTT default is: *No Priority*.

### RHB 1 PTT #1–#6 Radio Buttons

The **RHB 1 PTT #1–#6** radio buttons indicate the priority for the RHB 1 to capture audio.

### RHB 1 PTT No Priority Radio Button

The **RHB 1 PTT No Priority** radio button indicates audio is captured by the RHB 1 on a first come first serve basis.

The RHB 1 PTT default is, *No Priority*.

### RHB 2 PTT #1–#6 Radio Buttons

The **RHB 2 PTT #1–#6** radio buttons indicate the priority for the RHB 2 to capture audio.

### RHB 2 PTT No Priority Radio Button

The **RHB 2 PTT No Priority** radio button indicates audio is captured by the RHB 2 on a first come first serve basis.

The RHB 2 PTT default is *No Priority*.

### **Desk Mic PTT #1–#6 Radio Buttons**

The **Desk PTT #1–#6** radio buttons indicate the priority the Desk Mic to capture audio.

### **Desk Mic PTT No Priority Radio Button**

The **Desk PTT No Priority** radio button indicates audio is captured by the desk mic first come first serve basis.

The **Desk Mic PTT** default is *No Priority*.

### **Footswitch PTT #1–#6 Radio Buttons**

The **Footswitch PTT #1–#6** radio buttons indicate that when a PTT is generated from the footswitch, the ADHB-4 finds the correct audio source to use as configured in “FOOTSWITCH PTT SETUP” on page 54.

### **Footswitch PTT No Priority Radio Button**

**Footswitch PTT No Priority** radio button indicates audio is routed on a, first come first serve basis when the footswitch is activated

### **Console Generated PTT #1–#6 Radio Button**

The **Console Generated PTT #1–#6** radio buttons indicate that when a PTT is generated from the console, the ADHB-4 finds the correct audio source to use as configured in “CONSOLE GENERATED PTT” on page 52.

**NOTE:** This radio button cannot be changed.

## **RECORDER SETUP**

---

### **Common Record SEL Check Box**

The **Common Record SEL** check box indicates select audio is included in the common record audio output.

**NOTE:** This option cannot be unselected.

### **Common Record UNSEL Check Box**

The **Common Record UNSEL** check box indicates unselected audio is included in the common record audio output.

### **Common Record NENA Check Box**

The **Common Record NENA** check box indicates NENA audio is included in the common record audio output.

**NOTE:** NENA audio can be placed on hold; when it is on hold, it becomes part of the Unselect stream and follows the rules of the Common Record Unselect check box.

---

## SYSTEM PARAMETERS SETUP

---

### Change IP On Display Check Box

The **Change IP On Display** check box indicates the IP Address can be changed using the softkeys on the front of the unit.

### Submit Button

The **Submit** button is used to submit changes made to the System Setup window. Once clicked, the new configuration is temporarily saved.

To **permanently save changes**, do the following:

1. Click **Submit**.
2. From the left navigation pane, click the **Save Parameters** link.

Click **Save Parameters**.

*The configuration is saved to the ADHB-4.*

### Min Headset Volume Drop Down Menu

The **Min Headset Volume** drop down menu is used to select the minimum volume for the connected headset.

The range for this field is *0 to 100 percent*.

### Clock Update Field

The Clock Update field is used to set how often, in seconds, the ADHB-4 syncs its clock while the PC is running C-Soft.

The range for this field is *0 to 604,800 seconds*.

**NOTE:** When the field is set to 0, the clock update is disabled.

### LCD Backlight Field

The **LCD Backlight** field is used to adjust the display's backlight brightness. The brightness can also be adjusted using the Backlight softkey on the front panel. See "Backlight Menu" on page 76, for more information.

The range for this field is *1 to 10*.

The default for this field is 5.

To **change the backlight brightness**, do the following:

1. From the System Setup window, enter a **value** from 1 (darkest) to 10 (brightest) in the LCD Backlight field.
2. Click **Submit**.  
*The setting takes affect and the display changes accordingly.*
3. From the left navigation pane, click the **Save Parameters** link.
4. Click **Save Parameters**.  
*The configuration is saved to the ADHB-4.*

## System Status

The **System Status** window, shown in Figure 16, summarizes the current ADHB-4 system setup and activity. From this window, you can view the status of the auxiliary relays, gain levels, connected microphones, and speakers as well as monitor PTT statuses.

TELEX ADHB-4

Position Name: Theresa's      Firmware: 1.100

**AUX/RELAY STATUS**

AUX 1 Input: High      Relay 1: Off  
AUX 2 Input: High      Relay 2: Off

**GAINS STATUS**

Mic Level: -37 db      NENA Level: -37 db

**MICROPHONE STATUS**

Headset Connection: Connected      Headset PTT: Inactive  
RHB 1 Connection: Disconnected      RHB 1 PTT: Inactive  
RHB 2 Connection: Disconnected      RHB 2 PTT: Inactive

**SPEAKER STATUS**

Speaker 1: Connected      Speaker 4: Connected  
Speaker 2: Connected      Speaker 5: Disconnected  
Speaker 3: Muted      Speaker 6: Disconnected

**MISC STATUS**

Desk Mic Monitor: Inactive      Desk Mic PTT: Inactive  
Footswitch Monitor: Inactive      Footswitch PTT: Inactive  
NENA Hook: Off

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FIGURE 16. System Status Window—Refresh Status Link

### Refresh Status Link

The **Refresh Status** link, located in the left navigation pane, is used to refresh the information in the System Status window.

**NOTE:** This link is a manual refresh. The statuses in this window automatically update when changes occur.

## AUX/RELAY STATUS

### AUX 1 Input

The **AUX 1 Input** field indicates the current state of the AUX 1 input.

Field values can be: *Low* or *High*.

### AUX 2 Input

The **AUX 2 Input** field indicates the current state of the AUX 2 input.

Field values can be: *Low* or *High*.

**Relay 1 Field**

The **Relay 1** field indicates the current state of the relay 1.

Field values can be: *On* or *Off*.

**Relay 2 Field**

The **Relay 2** field indicates the current state of the relay 2.

Field values can be *On* or *Off*.

**GAINS STATUS**

---

**Mic Level Field**

The **Mic Level** field indicates the calculated input level for the currently active PTT for any source.

**NENA Level Field**

The **NENA Level** field indicates the calculated input level for the NENA which is currently off hook.

**MICROPHONE STATUS**

---

**Headset Connection Field**

The **Headset Connection** field indicates the current state of the headset.

Field values can be: *Connected* or *Disconnected*.

**RHB 1 Connection Field**

The **RHB 1 Connection** field indicates the current state of RHB 1's connection.

Field values can be: *Connected* or *Disconnected*.

**RHB 2 Connection Field**

The **RHB 2 Connection** field indicates the current state of RHB 2's connection.

Field values can be: *Connected* or *Disconnected*.

**Headset PTT Field**

The **Headset PTT** field indicates the current state of the headset's PTT switch.

Field values can be: *Active* or *Inactive*.

**RHB 1 PTT Field**

The **RHB 1 PTT** field indicates the current state of the RHB 1's PTT switch.

Field values can be: *Active* or *Inactive*.

**RHB 2 PTT Field**

The **RHB 2 PTT** field indicates the current state of the RHB 2's PTT switch.

Field values can be: *Active* or *Inactive*

---

## SPEAKER STATUS

---

### Speakers 1–6 Field

The **Speakers 1–6** field indicates if a speaker(s) is connected and whether or not it is active.

Field values can be:

<i>Connected</i>	Indicates the speaker is connected but idle.
<i>Disconnected</i>	Indicates a speaker is not connected.
<i>Active</i>	Indicates the speaker is currently in use.
<i>Muted</i>	Indicates the speaker is muted.
<i>Min Muted</i>	Indicates the speaker is muted to a minimum (audible level set in C-Soft Designer).

---

## MISC STATUS

---

### Desk Mic Monitor Field

The **Desk Mic Monitor** field indicates the current state of the desk mic monitor.

Field values can be: *Active* or *Inactive*.

### Footswitch Monitor Field

The **Footswitch Monitor** field indicates current state of the footswitch monitor.

Field values can be: *Active* or *Inactive*.

### NENA Hook Field

The **NENA Hook** field indicates the current state of the NENA hook.

Field values can be: *Active* (offhook) or *Inactive* (onhook).

### Desk Mic PTT Field

The **Desk Mic PTT** field indicates the current state of the Desk Mic PTT button/switch.

Field values can be: *Active* or *Inactive*.

### Footswitch PTT Field

The **Footswitch PTT** field indicates the current state of the Footswitch PTT switch activity.

Field values can be: *Active* or *Inactive*.

---

## *Save Parameters*

### Save Parameters Button

The **Save Parameters** button is used to store all parameters to the ADHB-4's memory for permanent storage.

**NOTE:** If the IP Address is changed on the Ethernet Setup window, the web browser is redirected to the new IP Address after the parameters are saved.



FIGURE 17. Save Parameters Window

### Restore Factory Default Button

The **Restore Factory Default** button is used to restore the configuration to the factory default settings.

To **restore factory defaults**, do the following:

1. Click the **Restore Factory Default** button.  
*The parameters are restored to the factory defaults.*
2. Click the **Save Parameters** button.  
*The factory defaults parameters are permanently saved to the ADHB-4.*

**NOTE:** If the restore Factory Default button is clicked in error, the previous configuration can be retrieved by

- Clicking the Reset button.
- Cycling power to the unit, off/on.

### Reset ADHB-4 Button

The **Reset ADHB-4** button is used to reboot the ADHB-4.

To **reset the ADHB-4**, do the following:

- > Click **Reset ADHB-4**.
- Or
- Cycle **power** to the unit off/on.





# Update Firmware

## Update Firmware

Telex VoIP Hardware firmware can be updated using **TSM** (Telex System Manager). A copy of TSM is available on the CD included in the shipment with the VoIP hardware. The firmware can also be downloaded at [www.telexradiodispatch.com](http://www.telexradiodispatch.com).

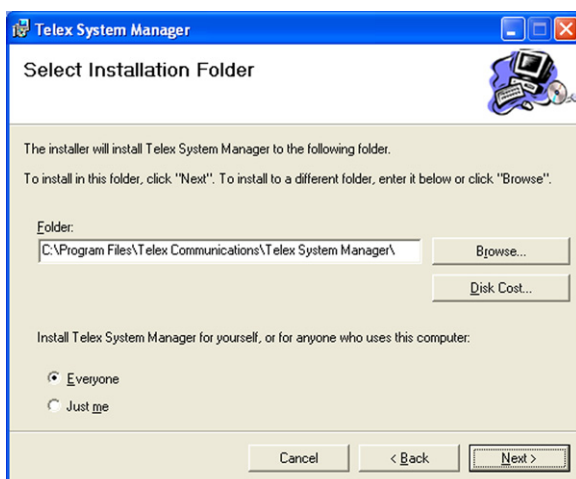
### NOTE:

- VoIP hardware includes the following Telex devices: IP-223, IP-2002, IP-1616, C-6200 and NEO-10.
- TSM uses .tfb (Telex Firmware Binary) files to update VoIP firmware.

### Install TSM

To **install TSM**, do the following:

1. Locate the **setup.exe** file on the Telex CD.  
OR  
Download **TSM** from [www.telexradiodispatch.com](http://www.telexradiodispatch.com).
2. Double-click **setup.exe**.  
*The Telex System Manager install window appears.*
3. Click **Next**.  
*The Select Installation Folder window appears.*



4. To specify an installation path for TSM, click **Browse**.  
OR  
To accept the default folder location, leave the **path** entered in the Folder field  
*By default, TSM is installed at C:\Program Files\Telex Communications\Telex System Manager\.*

5. To allow any user to access TSM, select **Everyone**.  
OR  
To allow only one user to access TSM, select **Just Me**.
6. Click **Next**.  
*The Confirm Installation window appears.*
7. Click **Next**.  
*A Please Wait message appears. Once TSM is installed, a success message appears on the Confirm Installation window.*
8. Click **Close**.

## Download Telex Firmware

When new firmware becomes available it is posted to our website. It can be downloaded at [www.telexradiodispatch.com](http://www.telexradiodispatch.com). Check the website periodically for updated firmware.

The screenshot shows a web browser window displaying the Telex website. The page title is "ADHB-4 - Advance Digital Headset Box". The main content area features a photograph of the ADHB-4 device, which is a rectangular unit with a blue LCD screen and several buttons. Below the image, there is descriptive text about the device's capabilities and compatibility. On the left side of the page, there is a "MAIN MENU" with various categories, including "Download". A black arrow points from the "Download" link in the menu to the "Download Link" text located below the product image. Another black arrow points from the "LOGIN FORM" text to the login fields in the bottom left corner of the page. The poll on the right asks "What would you like to see in the next version of C-Soft?" and lists several options with radio buttons.

FIGURE 18. Telex Website Download Link

To **download firmware**, do the following:

**NOTE:** If you have not previously logged onto the website, contact Telex technical support for the passphrase to set up your account.

1. In the username field, enter your **username**.
2. In the password field, enter you **password**.

**TIP:** If the login form is not visible in the left pane, scroll down to view.

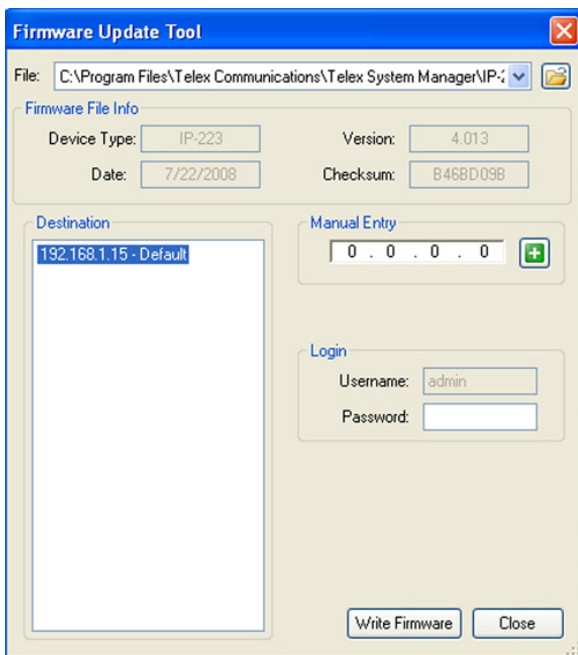
3. In the left pane, click **Download**.  
*The Download window appears.*
4. In the LATEST SOFTWARE/FIRMWARE pane, click the **link** for TSM's Official version.  
*The Telex System Manager Download window appears.*
5. Click **Download**.  
*The File Download window appears.*
6. Click **Save**.
7. Save the **file** to your computer.

**TIP:** Extract the TSM firmware .zip file to your Telex Communications folder.

8. Double click the **setup.exe** file.  
*The new version of TSM is installed.*

## Update Firmware Tool Window

The **Update Firmware Tool** window, shown in Figure 19, is used to upload the newest version of firmware to the device selected in the Destination field.



**FIGURE 19.** Firmware Update Tool

### *File Field*

The **File** field is used to select a firmware file to upload to the VoIP hardware.

---

## Firmware File Info Group Box

---

### *Device Type Field*

The **Device Type** field displays the type of device supported by the currently selected file in the File field.

### *Firmware Version Field*

The **Firmware Version** field displays the currently selected file's firmware version.

### *Left Navigation Pane*

The **Left Navigation Pane** displays all detected devices from the main dialog's Device list with device types that match the currently selected firmware files. Manually entered IP Addresses also appear in the navigation pane. Once the device is added, it appears in the left navigation pane and is available for selection.

**NOTE:** If the device you are updating does not automatically appear in the navigation pane, manually enter the IP Address in the Manual Entry field.

### *Manual Entry Field*

The **Manual Entry** field is used to enter the VoIP hardware's IP Address to add to the left navigation pane.

---

## Login Group Box

---

### *Username Field*

The **Username** field is used to enter the administrator's username.

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

**NOTE:** When updating firmware, *admin* is the only user who can update the firmware.

### *Password Field*

The **Password** field is used to enter the administrator's password, if one is required.

### *Write Firmware Button*

The **Write Firmware** button is used to begin the upload process. Once the button is selected, the file specified in the File field is uploaded to the VoIP hardware.

### *Close Button*

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

## Upload VoIP Hardware Firmware

Once TSM is installed and your new .tfb file is downloaded, you are ready to upload the VoIP hardware's firmware.

To **upload the VoIP hardware's firmware**, do the following:

1. Click the **TSM shortcut** on your desktop.  
OR  
From the Start menu, **select Programs | Telex Communications | Telex System Manager**.  
*The Telex System Manager window opens.*
2. Click **Tools | Firmware Update**  
*The Firmware Update Tool opens.*





---

## *LCD Display*

The ADHB-4 uses an LCD display to provide user feedback.

Upon power up, the following ADHB-4 information appears on the display for five (5) seconds:

- NAME: The name assigned when the ADHB-4 is configured on the System Setup window.
- IP: The IP Address of the ADHB-4.
- SN: The serial number of the ADHB-4.
- FW: The currently loaded firmware version.
- KN: The current kernel version.

**NOTE:** The same information can be viewed by pressing the System Info softkey on the front panel.

Once the power up sequence is complete and the system info screen disappears, the ADHB-4 displays in normal operation mode, indicating connectivity and activity for the individual audio sources. Pressing a softkey, changes the display to programming mode.

---

## *Volume Buttons*

The **Volume** buttons are used to control the volume of the controller headset connector. These buttons are sometimes used in programming mode, as a result, the volume cannot be changed while in programming mode.

### **Volume Level**

The **Volume Level** indicator displays the current volume, in 10% increments, set for the earpiece on the controller's headset.

The default value for this indicator is *50% volume*.

### **Front LED Indicator**

The **Front LED** indicates power to the unit is on if green; a PTT event is occurring if red.

### **Phantom Power LED Indicator**

The **Phantom Power LED** indicates phantom power is supplied to the desk mic connected to the MIC (XLR) connector on the left panel of the unit when lit.

---


## Normal Operation Mode

While in **Normal Operation** mode the ADHB-4 displays icons for speakers, auxiliary devices, relay controlled devices, NENA, and USB connection across the top of the ADHB-4 display. A volume meter, PTT indicator, time, date, and year occupy the middle of the display. Softkey labels, up to four (4), appear across the bottom.

---

### USB Indicator Icon

The **USB Indicator** icon indicates there is a USB connection to a PC running C-Soft.

Icon	Status Description
	Confirms the ADHB-4 is connected to a PC.

---

### Status Icons





The **Status** icons provide user-feedback about when and what type of audio sources are connected, and if they are active.

**NOTE:** Speaker volume is controlled from the console position.

#### Speaker Status Icons

**Speaker Status** icons indicate speaker's status and input number.



**NOTE:** When no speaker icon appears on the display, no speaker is connected.

Icon	Status Description
	When the speaker icon is white, the speaker specified by the number on the icon is connected.
	When the speaker icon has a red X to its right, the speaker specified by the number on the icon is muted.
	When the speaker icon is red, the speaker specified by the number on the icon is min-muted. For more information, see "Speakers 1–6 Field" on page 62.
	When the speaker icon is green, the speaker specified by the number on the icon is currently playing audio.




### AUX Status Icon

The **AUX Status** icon indicates the auxiliary device's status and input number.

Icon	Status Description
	When the auxiliary icon has a green <i>H</i> on the upper right, the state of the auxiliary device specified by the number on the icon is high.
	When the auxiliary icon has a yellow <i>L</i> on the upper right, the state of the auxiliary device specified by the number on the icon is low.


### Relay Status Icon

The **Relay Status** icon indicates the relay controlled device specified by the number on the icon is on. If no relay icon appears, the relay is off.

Icon	Status Description
	When the Relay icon appears, the relay specified by the number has changed state.

### NENA Status Icon

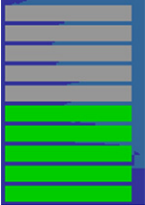
The **NENA Status** icon indicates the NENA is offhook.

Icon	Status Description
	When the NENA icon appears on the display, a NENA line is offhook and transmitting.

## Volume Indicator Icon

The **Volume Indicator** icon indicates the RX level coming out of the controller headset. From the bottom to the top, one (1) bar is lowest volume and 10 bars is the highest volume. Each increment represent 10% of the total volume. The volume is controlled with the volume buttons on the front of the ADHB-4.

The default setting is 50%.





Icon	Status Description
	<p>When audio plays from the controller headset's earpiece, this setting indicates the total volume.</p>

To **change the controller headset volume**, do the following:

- > From the front panel, press the **up** volume button.  
*The volume in the headset increases.*
- OR
- From the front panel, press the **down** volume button.  
*The volume in the headset decreases.*

## PTT Indicator Icons

The **PTT Indicator** icons indicate the audio source that is capturing audio.

Icon	Status Description
	<p>When audio is captured by the controller headset, a TX Headset icon appears on the display.</p>
	<p>When audio is captured by a desk mic, a TX Desk Mic icon appears on the display.</p>
	<p>When audio is captured by an RHB 1, a TX RHB 1 icon appears on the display.</p>
	<p>When audio is captured by an RHB 2, a TX RHB 2 icon appears on the display.</p>

---

## Programming Mode

Once a softkey is pressed, the ADHB-4 switches to programming mode.

Available selections are: *Network, Clock Mode, Backlight, and System Info.*

### Network Menu

The **Network** menu is used to change the IP Address and the Subnet Mask for the ADHB-4.

#### NOTE:

- If permission to change the IP Address is disabled, a message *To change IP or Subnet mask please refer to the webpage* appears on the display.
- For more information, see “Change IP On Display Check Box” on page 59.

To **change the IP Address from the ADHB-4 front panel**, do the following:

1. Press the **Network** softkey  
*The Network menu appears, indicating current IP Address and Subnet Mask.*
2. Press the **IP Address** softkey.  
*The IP Address menu appears with the first quad highlighted red.*
3. Use the +10 or -10 softkey to change the **quad number by 10.**
4. Use the up (plus) or down (minus) buttons to change the **quad number by 1.**
5. Press the **Next Quad** softkey to move to the next quad to the right.
6. Ensure the **IP Address** is entered correctly.
7. Press the **Back** softkey.
8. Press the **Save** softkey.  
*The screen momentarily flashes and the display is back to normal operation mode.*

To **change the Subnet Mask from the ADHB-4 front panel**, do the following:

1. Press the **Network** softkey  
*The Network menu appears, indicating current IP Address and Subnet Mask.*
2. Press the **Subnet Address** softkey.  
*The Subnet Address menu appears with the first quad highlighted red.*
3. Use the +10 or -10 softkey to change the **quad number by 10.**  
*The quad changes by increments of 10.*
4. Use the up (plus) or down (minus) buttons to change the **quad number by 1.**  
*The quad changes by increments of 1.*
5. Press the **Next Quad** softkey to move to the next quad to the right.  
*The active quad is highlighted red.*
6. Press the **Back** softkey.
7. Ensure the **Subnet Mask** is entered correctly.
8. Press the **Save** softkey.  
*The screen momentarily flashes, the new Subnet Mask is saved, and the display is restored to normal operation mode.*

## Clock Mode Menu

The **Clock Mode** menu is used to change the clock's display mode. The actual time is read from the PC. This clock appears after the first USB connection. After that time, the clock continues to display.

Available selection are: *24 HR* (military) or *12 HR* (civilian).

To **change how the time displays**, do the following:

1. Press the **Clock Mode** softkey.  
*The clock menu appears indicating the current time mode.*
2. Press the **12 HR** or **24 HR** softkey.  
*The display changes according to selection.*
3. Press the **Back** softkey.  
*The time displays in the selected mode after two(2) seconds.*

## Backlight Menu

The **Backlight** menu is used to adjust the display's backlight brightness. The brightness level ranges from 1 (darkest) to 10 (brightest). The brightness can also be adjusted using the web browser configuration windows.

To **change the backlight brightness**, do the following:

1. Press the **Backlight** softkey.  
*The backlight menu appears, indicating the current brightness level.*
2. Press the **+ softkey** to increase the brightness.  
OR  
Press the **- softkey** to reduce the brightness.
3. Press the **Back** softkey.  
*The display's brightness is set and the display is restored to normal operation mode.*

## System Info Menu

The **System Info** menu displays the same information as when ADHB-4 powers up. The web browser configuration password can also be reset in the menu.

**NOTE:** For more information, see "LCD Display" on page 71.

To **display the System Info menu** do the following.

1. Press the **System Info** softkey.  
*The system information appears on the display.*
2. Press the **System Info** softkey again to return to normal operation mode.

To **reset the web browser configuration software password**, do the following:

1. Press the **System Info** softkey.  
*The System Info menu appears on the display.*
2. Press the **softkeys** in the following sequence:  
1, 1, 3, 1, 2, 1, 3.  
*The message: Reset web password to default? appears on the display.*
3. Press the **YES** softkey to change the password to the system default.  
*The display changes to normal operation mode and accessing the web browser configuration now requires the default password.*  
OR  
Press the **NO** softkey to keep the current password.  
*The display changes to normal operation mode.*

**NOTE:** The default password is *admin*.

## C-Soft Controls

Speaker selection and volume controls are accessed from the C-Soft console. ADHB-4 connection indicators appear on the console status bar.

### C-Soft Status Bar

The **C-Soft** Status bar (1) displays connection indicators. The Title bar (2) indicates the name and location of the currently open file.

### NENA Status

The **NENA** status (3) indicates a connection to NENA is established.

### ADHB4 Status

The **ADHB4** status (4) indicates a connection to the ADHB-4 is established.

Available statuses are: *ADHB4* and *NENA*.

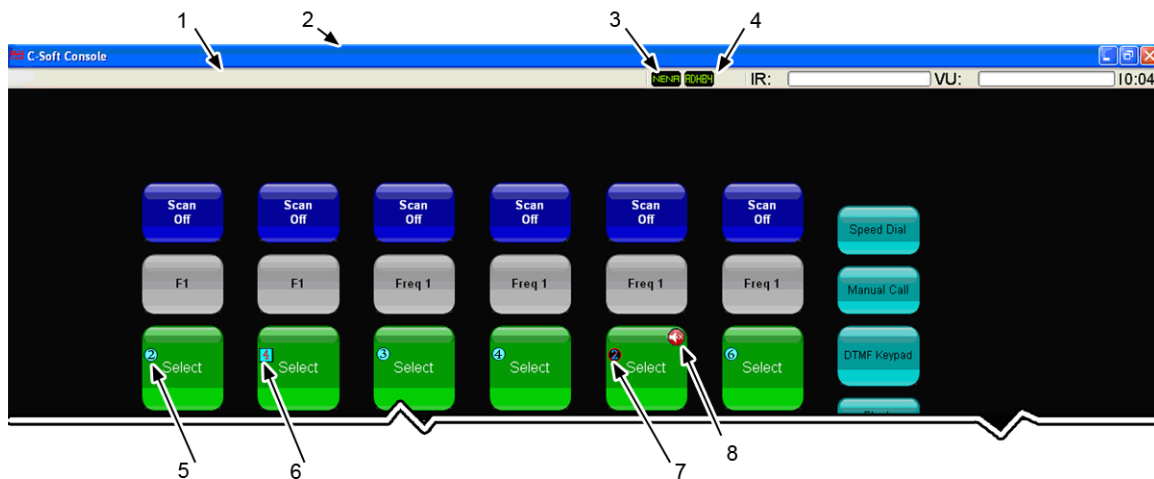


FIGURE 21. Console Speaker and Status Indications

### Speaker Status Indications

The **Speaker Status Indications**, shown in Figure 21, appear as icons on the Select, Phone, Global Call History, IRR, NENA and SIP buttons. The speaker icon indicates the speaker number and speaker status.

**NOTE:** The location of the speaker icons depend on the line's button size.

#### Single Speaker Icon

The **Single Speaker** icon (5) indicates the speaker number audio is routed on. This speaker icon is a cyan circle with a black speaker number in the center.

#### Multi Speaker Icon

The **Multi Speaker** icon (6) indicates audio is transmitting to the speaker number shown on the icon and speaker 2 (common unselect). This icon is a cyan square with a red speaker number in the center.

#### Disconnected Speaker Icon

The **Disconnected Speaker** (7) icon indicates the speaker configured on the button is not connected. This icon is a single speaker icon with a universal no symbol on top of a blue speaker number.

### *Muted Speaker Icon*

The **Muted Speaker** icon (8) indicates the speaker configured on the button is muted. This icon is a red circle containing a white speaker with an X.

---

## *Speaker Setup in C-Soft*

Initially, the ADHB-4's speakers are set up, by default, to route selected audio to speaker 1 and route all unselected speaker audio to speaker 2.

### **Unselect Audio**

Unselect audio can be configured from the console position to route through speakers other than the default. Select audio is always routed to speaker 1.

One (1) of two (2) methods can be used to change the unselect speaker audio:

- With the Per Line Unselect window, see “Per Line Unselect Window” on page 78.
- With the ADHB-4 Global window, see “ADHB-4 Global Window” on page 81.

### **Per Line Unselect Window**

The **Per Line Unselect** window is accessed by right-clicking the line's select button on the console. Once the window appears, you can choose speaker(s) to route Unselect audio through.

The default for this window is Speaker 1, *Unselect*; Speaker 2 *Unselect*.

### **Speaker 2–6 Radio Buttons**

The **Speaker 2–6** radio buttons are used to set one (1) Unselect positional speaker for the line's audio.

### **Positional + Speaker 2 Check Box**

The **Positional + Speaker 2** check box is used to set one (1) Unselect positional speaker plus speaker 2 for the line's audio. This setting also applies to recording unselect audio because speakers 3–6 are not recorded.

If this check box is selected, a positional speaker (3–6) and speaker 2 are used to play audio and the multi speaker icon, shown in Figure 21, appears on the line's Select button.

If this check box is not selected, speaker 2 is used to play audio and the single speaker icon, shown in Figure 21, appears on the line's Select button.

**NOTE:** Speaker 3–6 are not routed to the unselect recorder.

## Set Button

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

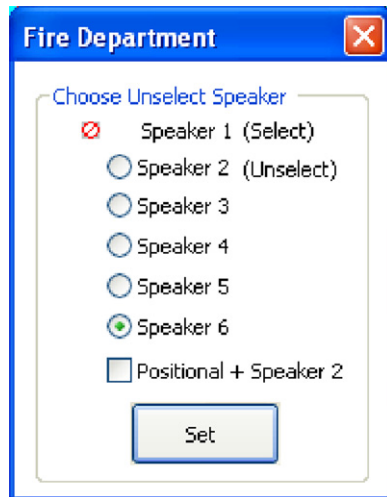


FIGURE 22. Per Line Unselect Speaker

**NOTE:** This window is also accessible through the ADHB-4 Global window. See “Per Line Unselect” on page 82.

To **change the per line unselect speaker routing**, do the following:

1. From the C-Soft console, right-click the line’s **select** button.  
*The Per Line Unselect window appears.*
2. Select the **radio button(s)** you want Unselect audio to be routed to.
3. Click **Set**.  
*The settings are saved and the window closes*  
OR  
Click the **red X** in the upper-right corner to discard changes.  
*The window closes and the settings are not changed.*

## IRR Speaker Window

The **IRR Speaker** window is used to select which speakers to play audio for instant recall. Once an Instant Recall button is right-clicked in C-Soft, the IRR Speaker window appears. See Figure 23.



FIGURE 23. IRR Speaker Window

To **change the IRR playback speaker**, do the following:

1. From the console, right-click the **Instant Recall** button.  
*The IRR Speaker window appears.*
2. Select one (1) **Speaker 1–6** radio button.
3. Click **Set**.  
*The Instant Recall button is configured to playback recordings from the selected speaker when clicked.*



## ADHB-4 Global Window

The **ADHB-4 Global** window is used to configure the ADHB-4 parameters.

To **open the ADHB-4 Global window**, do the following:

- > From the console, right-click the ADHB-4 indicator on the **status** bar.  
*The ADHB-4 Global window appears.*

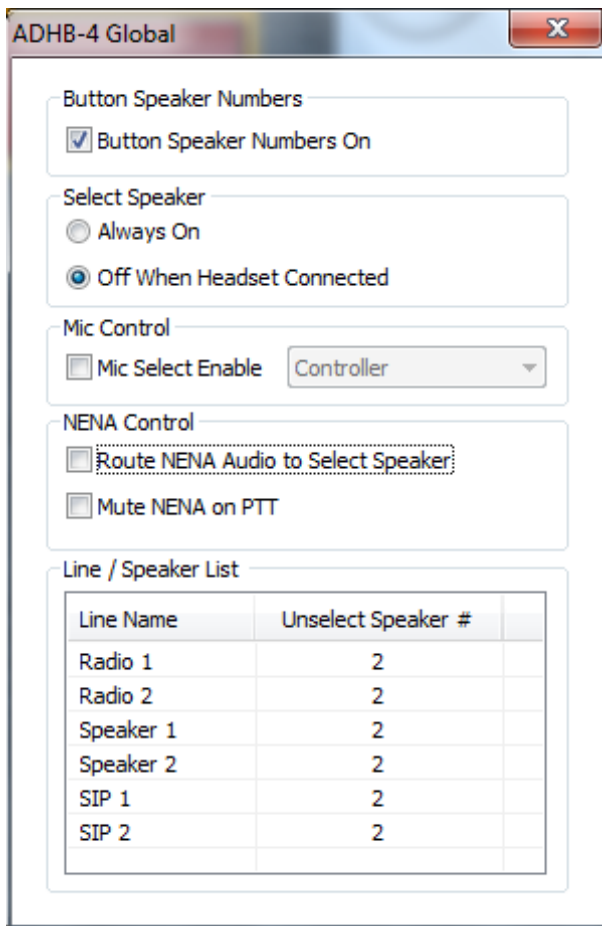


FIGURE 24. ADHB-4 Global Window

---

### Button Speaker Numbers Group Box

---

#### Button Speaker Numbers On Check Box

The **Button Speaker Numbers On** check box, shown in Figure 24, is used to configure whether or not the speaker numbers for the ADHB-4 speaker audio routing appears on the console buttons.

---

### Select Speaker Group Box

---

#### Always On Radio Button

The **Always On** radio button indicates audio always plays from the select speaker whether or not the headset is connected.

#### Off When Headset Connected Radio Button

The **Off When Headset Connected** radio button indicates that when a controller headset is connected, speaker 1 no longer plays audio.

---

## Headset Control Group Box

---

### Mic Select Enable Check Box

The **Mic Select Enable** check box is used by the console operator to select an audio source. If selected, the device in the Mic Select Enable field is the audio source. If unselected, the PTT priority is driven by the priority set up on the ADHB-4's web browser configuration windows.

**NOTE:** For more information, see “System Setup Window” on page 50.

### Mic Select Enable Drop Down Menu

The **Mic Select Enable** drop down menu is used to select an audio source. Select the Mic Select Enable check box to activate this menu, then select an audio source from the menu.

Available selections for this field are:

*Controller* - Enables the controller headset to route audio.

*RHB 1* -Enables the RHB1 to route audio.

*RHB 2* -Enables the RHB2 to route audio.

*Desk Mic* -Enables the desk mic to route audio.

---

## NENA Control Group Box

---

### Route NENA Audio to Select Speaker Check Box

The **Route NENA Audio to Select Speaker** check box indicates the NENA RX audio is routed to selected speakers and headsets.

### Mute NENA on PTT Check Box

The **Mute NENA on PTT** check box indicates the NENA RX audio is muted during radio PTT operations.

---

## Line/Speaker List Group Box

---

### Line Name Column

The **Line Name** column indicates the user-assigned name for the line.

### Unselect Speaker # Column

The **Unselect Speaker #** column indicates the speaker number used for unselect audio.

#### *Per Line Unselect*

The **Per Line Unselect** window, Figure 22, appears when a line name or unselect speaker number is double-clicked. For more information, see the “Per Line Unselect Window” on page 78.

## ADHB-4 Volume Control Window

The ADHB-4 Volume Control window is used to adjust the volume or to mute speakers connected to the ADHB-4.

Speaker 3 is muted in the example shown in Figure 25, as indicated by the red circle-backslash symbol.

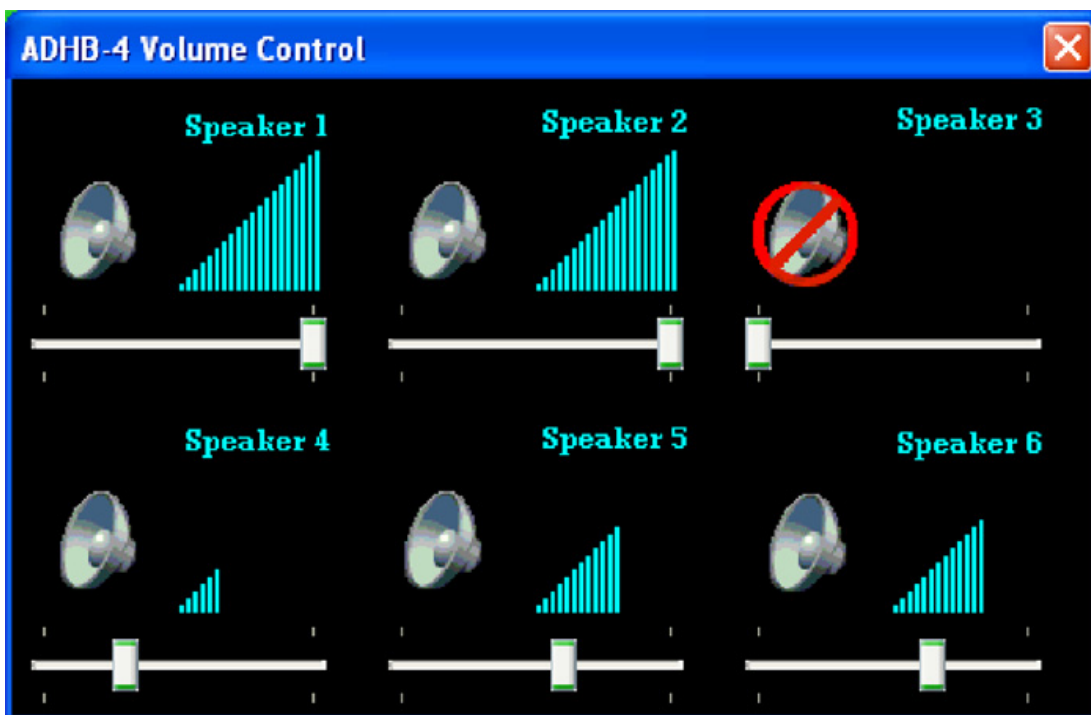


FIGURE 25. ADHB-4 Speaker Volume Control Window

To **adjust a speaker's volume**, do the following:

1. Click the **Status bar**.  
*The ADHB-4 Volume Control window appears.*
2. Move the speaker's **volume slider** to the right to increase volume or left to decrease volume.  
*The volume meter changes accordingly and the change in volume takes effect immediately.*
3. Click the **red X** in the upper right corner of the window to close the window.  
*The window closes.*

To **mute a speaker**, do the following:

- > Click the **speaker icon** for the speaker you want to mute.  
*A red circle-backslash symbol appears on the speaker icon and the speaker no longer plays audio.*



# *Remote Headset Box*

---

## *Overview*

The **RHB** (Remote Headset Box) is an optional piece of equipment used to expand headset options on the ADHB-4. Each RHB supports one (1) headset. Up to two (2) RHBs can be connected to each ADHB-4. The RHB is a plug and play device; the ADHB-4 recognizes a connection between the two (2) devices, allowing a central location for configuration within the ADHB-4.

## **Compatible Headsets**

For a list of compatible Telex headsets, see “USB connection indication.” on page 15.

---

## *Features*

- ADHB-4 provides power to an RHB.
- Dual channel 1/4” headset jack.
- Volume control knob.
- Supports both Select (left ear) and Unselect (right ear).
- LED for power and PTT indications.

## Controls and Indicators

### Front Panel Connections, Controls and Indications

1. **Power Indicator LED** - The Power indicator LED is green when power is supplied to the unit. It is red when a PTT is generated with the connected headset. Power is derived from the ADHB-4.
2. **Volume Knob** - The Volume knob is used to adjust the total volume supplied to the headset's earpiece.
3. **Dual Channel 1/4" Headset Jack** - The Dual Channel 1/4" Headset Jack is used to connect a headset to the RHB.
4. **Polarity Hash Marks** - Polarity Hash Marks are provided on the front of the unit to indicate headset connector orientation.

**NOTE:** The DISH series headset connector hash marks are reversed, i.e., the connector's hash marks must be rotated 180° from the hash marks on the ADHB-4 before inserting it into the jack.

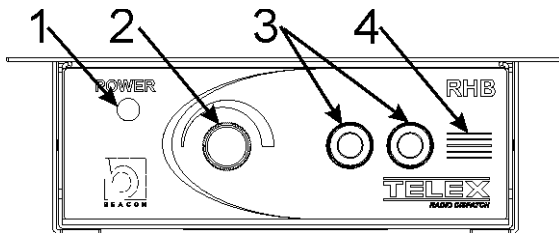


FIGURE 26. RHB Front Panel

### Back Panel Connection

1. **DB-9 Connector** - The DB-9 connector is used to plug the DB-9F end of the supplied cable to the RHB.

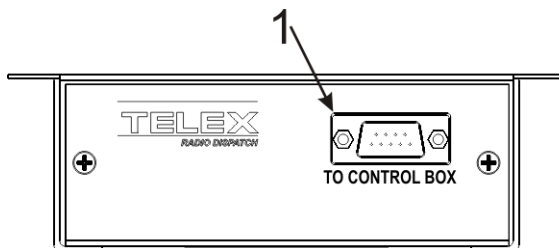


FIGURE 27. RHB Back Panel

---

## *Mounting*

The RHB can be mounted under the desk or on the desk top. The RHB is fitted with a mounting bracket that can be flipped 180 degrees to change the mounting orientation. The RHB ships with the mounting bracket in position for under-the-desk mounting. Mounting hardware is included in the RHB shipment.

To **change the bracket's orientation**, do the following:

1. Remove the **screws** (2 on each side) holding the RHB to the bracket.
2. Slide the **RHB** out of the bracket.
3. Turn the **bracket** 180 degrees.
4. Slide the **RHB** back into the bracket.
5. Re-install the **screws** to reattach the RHB.
6. Follow the **mounting** instructions.

To **mount the RHB**, do the following:

1. On the mounting surface, mark and drill **holes** to accept a #10-13 x 3/4" screw or 10-12 x 1" anchor.
2. Attach the **RHB** to the surface with 4 screws.

The RHB is easily removed from the bracket without having to unmount the bracket.

To **remove the RHB from the bracket while mounted**, do the following:

1. Disconnect the **headset**.
2. Disconnect the **RJ-45 connector** from the back of the unit.
3. Remove the **screws** (2 on each side) holding the RHB to the bracket.
4. Slide the **RHB** forward.

---

## *DB-9 Cable*

The **DB-9** cable that ships with the RHB is 6ft. long and designed to interface between the RHB and the ADHB-4.

For more information, see "REMOTE HEADSET (1 and 2) Connectors" on page 30.

---

## *RHB Installation*

To **install the RHB**, do the following:

**NOTE:** Install the ADHB-4 before proceeding.

1. Ensure the **RHB** is mounted. See “Mounting” on page 87.
1. Plug the **RJ-45 plug** into the TO CONTROL BOX (RJ-45) port on the back of the RHB.
2. Plug the **RJ-45 plug** end of the cable into a HEADSET (RJ-45) port on the back of the ADHB-4.
3. Turn the **volume knob** counter-clockwise to lower the volume.
4. Orient the **grooves** on the headset connector’s housing with the hash marks on the front of the RHB.

**NOTE:** The polarity hash marks on the DISH model headsets are reversed. The connector’s hash marks must be rotated 180° from the hash marks on the ADHB-4 before inserting it into the jack.

5. Insert the **plugs** in the jacks.
6. Adjust the **volume** before wearing the headset.

---

## *Configuration*

The RHB is configured with the ADHB-4 web browser configuration windows.

The following fields are used to configure the RHB:

See “HEADSET SETUP” on page 51.

See “CONSOLE GENERATED PTT” on page 52.

See “The Desk Mic Disable radio button indicates the desk mic is ignored when a PTT is generated from C-Soft.” on page 53.

See “NENA/PHONE MIC SOURCE SETUP” on page 56.

See “PTT PRIORITY SETUP” on page 57.

The RHB’s microphone connection status is summarized on the System Status window in the ADHB-4 web browser. See “MICROPHONE STATUS” on page 61.



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**Modification Date:** Feb 15, 2017

**Reason:** The multi-part form data parsing code performed slowly on Bosch hardware. This code was replaced with a buffered parser for better performance.

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\$Id: README,v 1.23 2006/04/22 22:19:37 tom Exp \$  
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```
printf("%s",png_get_copyright(NULL));
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December 3, 2004

zlib

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