TELEX

RADIO DISPATCH PRODUCTS

HB-3
Headset Adapter Panel
Technical Manual

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Warranty Notice (limited)

For warranty and service information, refer to www.telex.com/warranty.

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Claims

No liability will be accepted for damages directly or indirectly arising from the use of our materials or from any other causes. Our liability shall be expressly limited to replacement or repair of defective materials.

Warning

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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.

Table of Contents

CHAPTER 1

Introduction

General

The Radio Dispatch HB-3 Headset Adapter Panel provides a reliable means of connecting a headset(s), desk microphone and footswitch to computers running Radio Dispatch's C-Soft program and any Radio Dispatch tone control console.

The HB-3 also provides the ability to connect to any device with a NENA (National Emergency Numbering Association) I/O port. This allows for a single headset to be shared by the radio and phone systems. When the phone system is taken off-hook the headset microphone audio is routed to the phone system and selected radio is transferred back to the select speaker.

Features

The HB-3 provides the following features:

- Dual 1/4 inch prong headset jacks with independent select volume controls
- Independent footswitch inputs
- AUX relay
- Balanced recorder output
- Desk microphone input
- NENA I/O port
- AUX **TTL** (Transistor-Transistor Logic) inputs
- Hardware gain control

The HB-3 is connected to the remote control console via a modular cord between the HB-3 and the console handset jack. When operating with C-Soft on a computer, the HB-3 is connected to the PC's serial port to provide **PTT** (Push-To-Talk) and monitor signaling. Audio connections are made to the PC's sound card.

Accessories

The HB-3 can be ordered with several optional accessories.

Part Number	Description
FS-1	FS-1 Footswitch
DISH-1	Single Muff Headset with Microphone and Inline PTT Switch
DISH-2	Dual Muff Headset with Microphone and Inline PTT Switch

CHAPTER 2

Installation

Mounting

The HB-3 can be mounted under or along the side of a dispatch position. Choose a location that allows for easy headset connection and is free of direct hits from human knees and furniture arms.

Adjustments

- Headset I TX input level (R92)
- Headset I RX output level (R96)
- Headset II TX input level (R69)
- Headset II RX output level (R57)
- Deskmic TX input level (R45)
- NENA phone TX input level (R58)
- NENA phone TX compression level (RV1)
- NENA phone RX output level (R23)
- Recorder output level (R107)
- PC microphone out compression level (RV2)

Headset I and II Connections

The HB-3 can accept either a 4- or 6-wire dual ¼ inch phone jack plugs; the HB-3 is shipped to accept the 6-wire plug without modification. The horizontal lines adjacent to the right phone jack of each headset pair are a key symbol for stereo headsets.

To **modify a port to accept a 4-wire headset (no PTT)**, do the following:

1. Open the **HB-3.**
2. Cut the small **trace** between JMP2 for headset I and JMP1 for headset II.

Desk Microphone Connection

The **Desk Microphone Connection** is a standard MD-MS desk microphone connection. Radio Dispatch's C-Soft dispatching software with select and unselect audio playing from the computer speakers allows for dispatching with a desk microphone.

Headset On/Off Switch

The **Headset On/Off Switch** is used to provide off-hook signaling to switch receive audio from the speaker to the headset earpiece. When using a desk microphone the switch must be in the on position.

Power Supply Connection

The **Power Supply Connection** is made via a 2.5mm plug receptacle on the rear right of the unit. The positive terminal is the center conductor. The HB-3 requires a 12 to 16Vdc, 500mA, of clean power.

Serial Connection

The **Serial Connectors** are connected to the serial port of the PC using the supplied serial cable. The HB-3 in PC mode can provide the PC with serial data for PTT, Monitor and AUX Input functions, also the PC using C-Soft can control two (2) AUX relays installed in the HB-3.

Relay Connections

The **Relay Connectors** are located on the right screw terminal connector on the rear of the HB-3, the two (2) relays can be controlled by the C-Soft program. A 6-pin screw terminal block provides connection to the relays.

REFERENCE: For more information, see the C-Soft Technical Manual (F.01U.218.561).

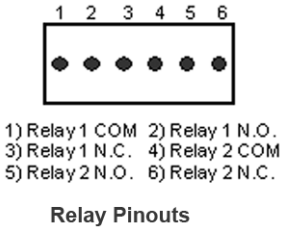

FIGURE 1. Relay Connector Pinouts

Recorder Connections

The **Recorder Connector** output is provided at pins 3 and 4 of J17 the middle 6-pin screw terminal block, see Figure 2. Audio passing through the HB-3 is summed, amplified and passed to a balanced output transformer for a single position recorder capability.

AUX IN Connections

Two (2) **AUX IN Connector** inputs are located at pins 1 and 2 with reference to pin 6 (ground) of J17 the middle 6-pin screw terminal block. The two (2) AUX inputs are communicated to the C-Soft program via the serial cable.

IMPORTANT: The Earth Ground connection on the AUX port must be connected for proper operation. It provides a path for any external noise to be shunted to.

REFERENCE: For more information, see the C-Soft Technical Manual (F.01U.218.561).

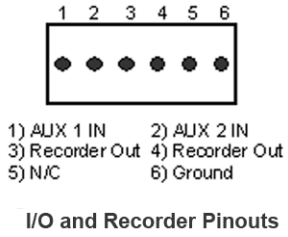

FIGURE 2. I/O and Recorder Pinouts

Footswitch Connections

The **Footswitch Connector** has three (3) different footswitch inputs for PTT of the desk mic and headset I and II. Each microphone can be controlled individually using the 6-pin footswitch terminal block.

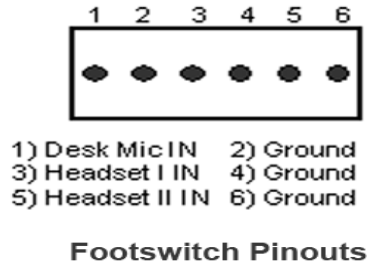

FIGURE 3. Footswitch Pinouts

Console Connector

The **Console Connector** can be connected directly to a Radio Dispatch console (C-5000, C-1610, C-1616, C-2000, C-2002, IP1616 and C-6200) and provide headset and NENA phone operation.

To **make a connection via the enclosed 4-pin modular cable**, do the following:

1. Install one (1) end into the console port (J1) of the HB-3.
2. Install one (1) end into the handset port of the console.

   NOTE: JMP4 (internal) must be moved to the console mode position.

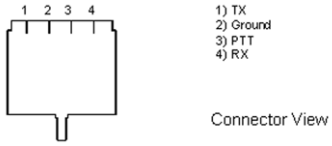

FIGURE 4. Console Pinouts

NENA Phone Connections

The **NENA Phone Connector** capability is accomplished by using NENA connector pinouts diagram.

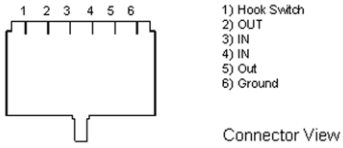

FIGURE 5. NENA Connector Pinouts

Adjustment and Sound Card Connections

MIC In Connector

The **MIC In Connector** jack allows for dispatching using a computer headset or desk microphone.

Speaker Out Connector

The **Speaker Out Connector** connects computer speakers to the HB-3.

MIC Out to PC Connector

The **MIC Out to PC Connector** jack connects to the MIC In on the PC sound card.

Speaker In from PC Connector

The **Speaker In from PC Connector** jack connects to the SPKR OUT on the PC sound card.

Level Settings and Adjustments

Level Settings and Adjustments

Level potentiometers can be adjusted once the unit is connected into the system.

PC Microphone Level

The **PC Microphone Level** sound card can be adjusted by moving JMP5, B position = LOW.

PC Microphone Compression Level (PCB 750647 Rev C)

The **PC Microphone Compression Level** sound card can be adjusted by adjusting RV2. **AGC** (Automatic Gain Control) is enabled by placing JMP6 in the A position.

Headset Receive Levels

The **Headset Receive Levels** for Headsets I & II RX earpiece levels are adjusted by the HB-3 front panel controls.

Headset Transmit Levels

The **Headset Transmit Levels** for Headsets I & II TX are adjusted by R92 and R69 respectfully.

Desk Microphone TX Level

The **Desk Microphone TX Level** is adjusted using R45 and by adjusting the pot through the hole on the bottom plate of the desk microphone. Adjust both pots for good quality sound.

NENA Phone Levels

The **NENA Phone Levels** are adjusted with R58 for RX into the HB-3 and R23 for the TX out of the HB-3.

NENA Phone Compression Level (PCB 750647 Rev C)

The **NENA Phone Compression Level** to the NENA port can be adjusted by adjusting RV1. AGC is enabled by placing JMP7 in the A position.

Recorder Level

The **Recorder Level** output is adjusted by R107; Unselected PC audio can be added to the recorder output by placing JMP3 into the A position.

CHAPTER 4

Theory of Operation

Console Mode

The HB-3 operates in **Console Mode** with JMP4 in the B position. All PTT and headset audio is routed to the console jack (J1) for connection to the handset jack of any Radio Dispatch consoles using the supplied 4-pin modular cable.

Headset I TX audio is amplified for connection to either the console or NENA interface. During radio PTT, the TX audio and PTT signals are sent to the console. If the NENA interface is off-hook, an on-hook signal is applied to the console and select audio is played on the console speaker. The NENA RX audio is played on the headset earpiece and the headset microphone is hot to the NENA TX circuit. If PTT is pressed, the headset microphone is coupled to the console TX circuit and console PTT is applied.

PC Mode

The HB-3 operates in the **PC Mode** with JMP4 in the A position. All PTT and monitor commands are routed to the serial port as a serial command. All microphone audio is routed to the MIC OUT to PC jack (J7).

Headset I TX audio is amplified for connection to either the PC or NENA interface, during radio PTT the TX audio and PTT signals are sent to the PC. If the NENA interface is off-hook, selected RX audio is applied to the PC speaker. The NENA RX audio is played on the headset earpiece and the headset microphone is hot to the NENA TX circuit, if PTT is pressed the headset microphone is coupled to the PC MIC OUT circuit and PTT serial command is applied to the PC.

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