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Return Address

# **MACKENZIE**

**MACKENZIE LABORATORIES, INC.**  
1163 Nicole Court  
Glendora, CA 91740 USA

## **DVSD-3000**

**SD Card / USB Memory Key  
Message On Hold System**

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### **OTHER MACKENZIE PRODUCT LINES**

**Digital Message Repeaters** - Mackenzie's line of Digital Message repeaters are the ideal audio announcement solutions for Public Address, Amusement, Entertainment, Museum and Exhibit applications. Self contained solid state systems offer unparalleled reliability. A variety of channel, connection, bandwidth and memory configurations are available.

**Controls and Peripherals** - Many applications require additional equipment to optimize the performance of Mackenzie products. This area focuses on items developed or sourced for their compatibility, ease of use and value. Included are: input/output controllers, speakers, amplifiers, motion sensors and pushbuttons among others.

**Transit** - Mackenzie is making a difference in transit applications with innovative solutions for ADA compliance and Passenger Information Systems. These products address a variety of audio and text messaging requirements and support both in-vehicle and wayside installations.

**Overhead Page Management** - Mackenzie's OPM series of Digital Page Stacker/Repeater and Feedback Eliminators offer advanced features for the most difficult paging and intercom applications. A unique design makes feedback virtually impossible by recording then repeating pages which opens the loop between the input microphone and speakers. Various models are available to support simple repetition, multiple page stacking and multiple input channels.



**User's Manual**  
**Version 1.4 Revised 25, July 2008**  
**Doc 99-20-189 - \$25.00**


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**General Safety Instructions**

Always follow these basic safety precautions when using the system:

1. Read carefully and understand all instructions.
2. Follow all warnings and instructions marked on the product.
3. DO NOT block or cover ventilation slots and openings.
4. DO NOT place the product in a closed enclosure or cabinet unless proper ventilation is provided.
5. Never spill liquid on the product or drop objects into the ventilation slots and openings. Doing so may result in serious damage to the components.
6. Repair or service must be performed by a factory authorized repair facility.
7. DO NOT staple or otherwise attach the power supply cord to building surface.
8. DO NOT use the product near or in wet or damp places, such as wet basements.
9. DO NOT use extension cord. Install within 6 feet of a grounded outlet receptacle.
10. DO NOT install during lightning storm.
11. Never touch un-insulated wires or terminals unless the unit is disconnected from both power and the rest of the phone system.
12. Use Caution when installing or modifying configuration switches or control lines.
13. Install in a protected location where no one can step on, or trip over, power and line cords.
14. The unit must be securely attached to a wall board, rack or table mounted.
15. Use correct power source. Use only the power pack supplied.

	<p><b>CAUTION:</b> If any wiring from the system leaves the premises, you must use proper electrical protectors.</p>
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**Regulations - FCC (Part 15) Radio Frequency Interference**

The DVSD-3000 generates and uses radio frequency energy and if not installed and used in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. Unit complies with the limits for Class A devices in accordance with the specifications in Subpart J of Part 15 of the FCC Rules. This testing is designed to provide reasonable protection against such interference. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the unit off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the radio or TV receiving antenna.
- Relocate the unit with respect to the radio or TV receiver or vice-versa.
- Plug the unit into a different outlet so that it and the radio or TV receiver are on different branch circuits.
- If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions.

**Licensing**

The DVSD is designed to play WAV and MP3 files. Do not attempt to use other audio formats as they will not operate properly in the device.

MPEG Layer-3 audio decoding technology licensed from Fraunhofer IIS and Thomson.

**Warranty & Registration Card for the DVSD-3000 – Message-On-Hold System**

Date: \_\_\_\_\_ Serial No.: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

Seller: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

Return warranty card via:

FAX: (909) 394-9411

MAIL: Address on reverse side

ONLINE: [www.macklabs.com/registration.html](http://www.macklabs.com/registration.html)

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**NOTES**

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## 7. WARRANTY, SERVICE & RETURNS

The industrial grade housing and quality construction of the Mackenzie DVSD-3000 virtually eliminates the need for service or maintenance. There are no user-serviceable components within the Mackenzie DVSD-3000. Refer all servicing to the factory.

### 7.1 Warranty Coverage:

The Mackenzie DVSD-3000 is tested and checked before shipment and are guaranteed against defective material or workmanship for a period of three (3) year from the date of purchase. Should trouble ever develop, contact the Factory directly by telephone or in writing. If it is determined that the equipment requires Factory service, return it to the Factory. If our inspection shows that the trouble was caused by defective material or workmanship, we will repair or replace the equipment without charge and return prepaid. Repairs made necessary by abuse, improper use, unauthorized service or maintenance, and/or improper installation, as well as out of warranty repairs, will be charged at our regular repair prices in effect at the time. The obligation under this warranty shall be limited to the replacement, repair or refund of any such defective device within the warranty period.

This warranty is in lieu of and excludes all other warranties, expressed or implied, and in no event shall MACKENZIE be responsible for damage to other equipment or property, for any anticipated profits, consequential damages, loss of item, or other operation or use of this product, and MACKENZIE'S maximum liability shall not ever be greater than the price paid for the equipment. This warranty gives you specific legal right. Your rights may vary from state to state. Inquiries regarding use, repair and service should be made to:

MACKENZIE LABORATORIES, INC.  
1163 Nicole Court, Glendora, CA 91740 USA  
Telephone: (909) 394-9007  
FAX No: (909) 394-9411  
Email: info@macklabs.com  
Web: www.macklabs.com

### 7.2 What we ask you to do:

To get warranty service for your DVSD-3000 system, you must provide proof of the date of original purchase. In the event you need to ship your DVSD-3000 system to the factory for service, call us for a return authorization number. When you ship your DVSD-3000 system, you must prepay all shipping cost. We suggest that you retain your original packing material in the event that you need to ship your DVSD-3000 system. When sending your DVSD-3000 system to the factory, include your name, address, phone number, proof of date of purchase, and a description of the operating problem. After repairing or replacing your DVSD-3000 system, we will ship it to your return address at no cost to you within the USA. Repair or replacement of your DVSD-3000 system at our factory is your exclusive remedy.

### 7.3 What this warranty does not cover:

This warranty does not cover defects resulting from accidents, damage while in transit to factory, alterations, unauthorized repairs, failure to follow instructions, misuse, fire, flood, and acts of God.

### 2.1 Wall or Table Installation:

1. Locate a proper space on the telephone equipment board or wall. You can mount the DVSD-3000 unit in one of three positions: flat, side, or horizontal.
2. Position the unit on the board; mark the mounting hole locations.
3. Using the mounting screws provided, secure the DVSD-3000 system to the board or wall.
4. If table top mounting the DVSD-3000, stick the enclosed rubber feet on the bottom of the unit.

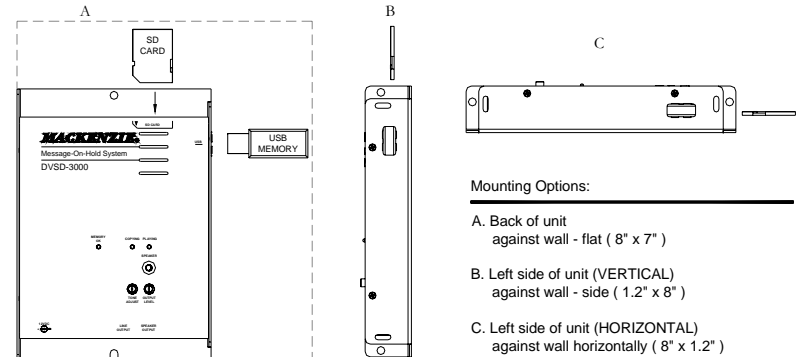


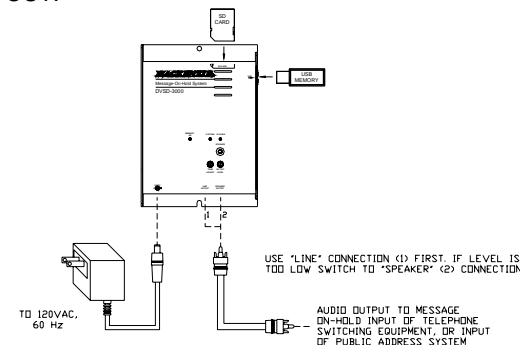
Figure 1 - Mounting

### 2.2 Connecting the power pack

1. Plug the power pack into a 120VAC power outlet which is not connected to a switch.
2. Plug the power plug into the DVSD-3000 system's power jack marked 12VDC.
3. There is no power switch on the DVSD-3000 system, so as soon as power is connected, the system will be active.

### 2.3 Connection to the Telephone equipment

Connect one side of the supplied RCA – RCA cable to the telephone system's line level input. Connect the other side of this cable to the DVSD-3000's LINE OUT. There are two Audio outputs on the DVSD-3000, LINE OUT, and SPKR OUT. Use the LINE OUT first adjusting the audio output volume potentiometer to obtain the correct audio level. If this does not provide enough audio level, then switch to the SPKR OUT.



### 3. OPERATION:

#### 3.1 Message loading – USB Memory Key, or SD Card:

When you receive the new DVSD-3000 Message on Hold system, it will contain a blank SD Card, meaning there will be no messages on the unit. To load new messages into the DVSD-3000, simply insert a pre-recorded, and properly formatted (Section 6), USB memory key or SD Card into the DVSD-3000 unit. Make sure to insert the memory with the label facing toward the top of the machine.

The DVSD-3000 supports playback of MP3 or WAV files. Reference Section 6, “Memory Key/Card Formatting” for additional information on how to configure the memory.

When a new memory is inserted, the DVSD-3000 will automatically start playing the messages on it. The first message to play will be message #1, and will continue through the last message on the memory, then loop back to play message #1 again. Whenever a message is playing, the green “PLAYING” LED will light.

The DVSD-3000 system offers the user to load new messages onto the unit by using a USB memory key to transfer the files. See Section 3.2 for more information about this function

#### 3.2 Message Downloading –USB Memory Key transfer:

To maximize up time, and prevent the possibility of not having messages on hold for extended periods, the DVSD-3000 system offers the ability to load new messages onto the unit by using a USB memory key to transfer the files.

If the DVSD-3000 has an SD Card installed, and the system senses that a USB memory key is inserted, the unit will immediately stop playing, erase the contents of the SD Card, and copy the audio files from the USB memory key to the SD Card. If there are no audio files on the memory key, the SD Card will not be erased, and no files will be transferred.

While the transfer takes place, the Red “COPYING” LED will light. Do not remove either media, or power down the DVSD-3000 while in this mode, or the memory could become corrupted.

**\*\*\*NOTE: There is no UNDO function associated with transferring files from the USB memory key to the SD Card. Once the USB key is inserted, and the system recognizes valid audio messages on it, the DVSD-3000 will erase the audio files on the SD Card and copy the new audio files from the USB key to it.\*\*\***

#### The Audio LED doesn't light after a memory is inserted.

- Verify that the memory is inserted properly.
- Remove the memory key and verify that the root folder of the drive contains at least one audio file with an MP3 or WAV extension.

#### Can't transfer files from USB Key to SD Card

- Verify that there is an SD Card installed in the system.
- Remove the memory key and verify that the root folder of the drive contains at least one audio file with an MP3 or WAV extension.

#### System won't play from USB Key

- Remove the memory key and verify that the root folder of the drive contains at least one audio file with an MP3 or WAV extension.
- Copy the files to a different memory key, and determine if second key works

#### Can't hear anything from the audio output

- If the Audio LED is off, there is no audio being output by the system.
- Verify that the RCA to RCA connector is securely attached to the DVSD-3000 and the phone system.
- Turn the output level adjustment clockwise to increase the Audio output level.
- Use the 8 ohm output instead of the line level output.

#### Can't hear anything through the monitor speaker

- If the Audio LED is off, there are no recorded messages on the system.
- Press the Speaker button to toggle the speaker enable setting.
- Verify that the audio playing is not recorded too low.

### 6. MEMORY CARD FORMATTING

The DVSD-3000 can use audio files that are formatted as either \*.WAV (44.1kHz, 16 bit) or \*.MP3 (44.1kHz, 32-320 kbps, VBR).

- All Audio files should be in the root folder of the memory card / key
- Messages may be recorded as mono, or stereo, but unit will only play the left side audio.
- The user can choose to have a single, longer message, or multiple shorter messages on the unit.
- The length of each individual message does not have to be the same.
- The audio should be set to a nominal level of -4dBm.
- The dynamic range of the production should be held low so as to allow the production to be recorded at the highest possible level without exceeding 0dBm.
- If multiple messages are used, the files will be played in alphanumeric order by the DVSD-3000. It would be beneficial to name the files in a way that the user can easily determine what they are, and the order they play. Some examples are shown below:

- 1.mpg or 1.wav or 1\_brownies.mp3 will play first.
- 2.mpg or 2.wav or 2\_apples.mp3 will play second.
- 3.mpg or 3.wav or 3\_top sirlain.mp3 will play third.
- 4.mpg or 4.wav or 4\_salmon.mp3 will play fourth.

- If more than 20 messages are detected by the system, the messages following the 20<sup>th</sup> in the ordering sequence will not be played.
- If somehow, the card has two files with the same name, but different suffix, the MP3 file will play before the WAV file.

### 3.6 Audio Adjustments

#### Output Level

This controls the level of both audio outputs on the DVSD-3000. When turned clockwise, the system will increase the audio output level. When turned counter-clockwise the system will decrease the audio output level.

#### Tone Adjustment

Adjust the tone of the output audio. When turned clockwise, the system will lower the bass, while adding treble to the audio output. When turned counter-clockwise the system will lower the treble, and add bass to the audio output. When in the center position, no Treble, or Bass is added to the system.

### 3.7 Connections

#### 12VDC, 2.5mm Barrel connector

The system is powered by a 12VDC @ 1 Amp power adapter. Use only the AC-DC power adapter supplied by the manufacturer to guarantee proper operation.

#### LINE OUT, RCA connector

A 600 ohm, audio output. When installing the DVSD-3000 system, connect this output to the phone system, or PA system, first.

#### SPKR OUT, RCA connector

An amplified, 2.5 watt into 8 ohm, audio output. Use this Audio output if the Audio from the Line output can't drive the on-hold circuit, or PA amplifier, to a high enough level.

## 4. POWER FAILURE RECOVERY

The memory medium used by the DVSD-3000 is not dependent upon power or battery backup to retain its memory. This eliminates problems associated with brown outs or unexpected power losses. When power is returned, the system will immediately start the operation it was in prior to power being removed.

## 5. TROUBLESHOOTING GUIDE

Before contacting the factory, please review the following answers to some common problems.

#### No LEDs are active on the DVSD-3000.

- Verify that the AC-DC power adapter is plugged into non-switched AC power outlet.
- Verify that the power connector is plugged completely into the jack on the DVSD-3000.

#### Can't insert the memory key / card into the system

- Make sure the memory is aligned properly prior to inserting it into the unit.
- Make sure there are no foreign objects in the memory slot prior to installing the memory.

## 3.3 Automatic message playback

After power up, the DVSD-3000 will automatically begin playing the audio files from the installed memory through the audio outputs. There is no control, or user input, required to initiate the playback. The green, "PLAYING" LED will light whenever the system is playing messages.

The system will play from the SD Card if it is populated with a valid audio message on it.

If there is no SD Card inserted, and the system senses a valid USB memory key with a valid audio message on it, the system will play from the USB memory key.

If the system senses both SD Card and a USB memory key, a memory transfer operation will commence, and then start playing from the SD Card. See section 3.2 for more details.

The messages in memory are automatically played back sequentially as described in section 6.

## 3.4 Pushbutton descriptions

#### Speaker pushbutton – Black, momentary

Allows the user to turn ON or turn OFF the internal monitor speaker.

- The DVSD-3000 speaker is shipped in the OFF state. Pressing this button will toggle the state of the speaker enable.
- If the speaker is OFF, and the button is pressed, the speaker will turn ON.
- If the speaker is ON, and the button is pressed, the speaker will turn OFF.

The volume of the monitor speaker is fixed at the factory. There is no adjustment for the level of playback through the monitor speaker.

## 3.5 LED (Light Emitting Diodes) descriptions

#### "MEMORY" LED, Green

Upon power up, this LED light solid if either an SD Card or a USB memory key is detected by the system, and that memory has at least one valid audio message on it.

If there is a memory card detected with no audio, or invalid audio messages on it, this LED will blink quickly 2 times every half second.

If no memory is detected by the system at power up, this LED will blink two times per second continuously until a memory card is detected.

#### "COPYING" LED, Red

This LED will light whenever files are being transferred from the USB Memory key to the SD Card.

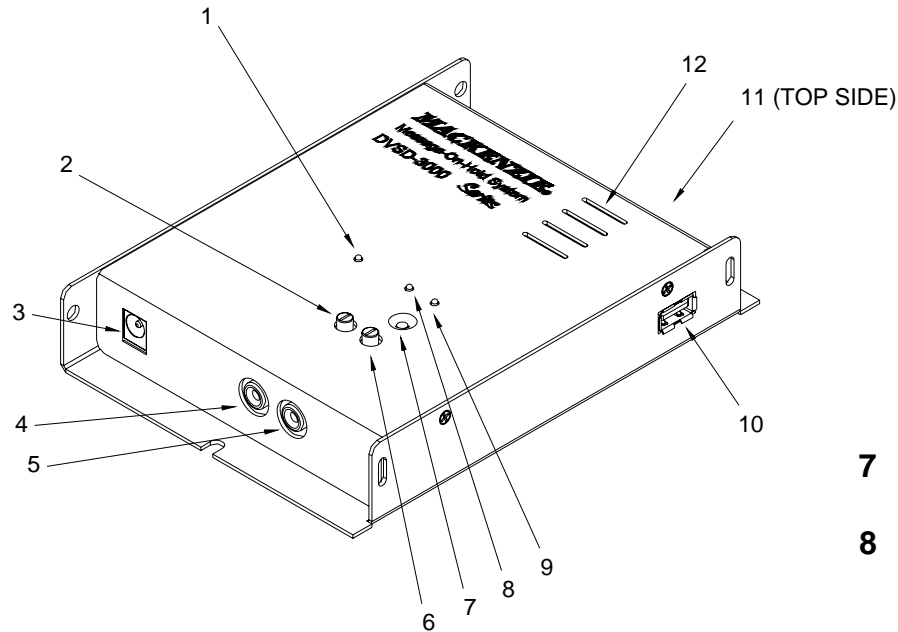
Should an error occur during the transfer of the files from the USB memory to the SD Card, this LED will blink continuously two times per second until power is cycled, or until the USB Key is removed and reinserted, allowing the transfer to be restarted.

#### "PLAYING" LED, Green

Whenever the unit is playing messages, this LED will light solid.

**Model DVSD-3000  
MESSAGE-ON-HOLD SYSTEM**

- 1 MEMORY OK LED (GREEN):**  
LED is ON if either an SD Card or a USB memory key with valid audio messages is detected by the system. Blinks if no files are detected.
- 2 TONE ADJUST KNOB:**  
Adjusts the Bass & Treble amount to deliver the best overall system performance.
- 3 POWER JACK:**  
Insert supplied power adapter.
- 4 LINE OUTPUT:**  
Audio output level of up to +4dB into 600 Ω, this is a standard level for most applications.
- 5 SPEAKER OUTPUT:**  
Audio output level of up to 2.5W into 8 Ohm. Use this output if more drive is needed to reach a more comfortable listening level.
- 6 AUDIO OUTPUT LEVEL KNOB:**  
Adjusts the volume to the both line level and speaker audio outputs.



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- 7 SPEAKER PUSHBUTTON:**  
Turns local Monitor speaker ON/OFF.
- 8 COPYING LED (RED):**  
Used to display recording mode. Red light ON, indicates message (s) is being copied from USB memory key to SD Card.
- 9 PLAYING LED (GREEN):**  
This green LED is ON when the system is playing Pre-Recorded messages.
- 10 USB MEMORY KEY CONNECTOR:**  
Audio files can be played directly from a USB memory key, or the files on it can be copied to an SD card, if one is present.
- 11 SD CARD CONNECTOR:**  
Audio files be played directly from an SD card
- 12 MONITOR SPEAKER:**  
Allows user to preview message play back.

**THE MACKENZIE DYNAVOX  
DVSD-3000 Quikey**  
03 Mar 2008, Version 1.0  
Mackenzie Laboratories, Inc.  
1163 Nicole CT, Glendora, CA 91740 USA  
TEL (909) 394-9007 FAX (909)394-9411  
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