MACKENZIE®

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

OVERHEAD PAGE MANAGEMENT

OPM-3SM

Multiple Channel Page Stacker, Feedback Eliminator and Messaging 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.

Storecasting & Message On Hold - Mackenzie's full line of digital Storecasting & Message-On-Hold systems, turn your public address system and telephone into a powerful marketing tool. The DYNAVOX series offers maintenance free digital playback with USB, modem or satellite download. Several varieties are available with advanced features such as Music-Thru, individual message enable/disable, message sequencing and more.

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.
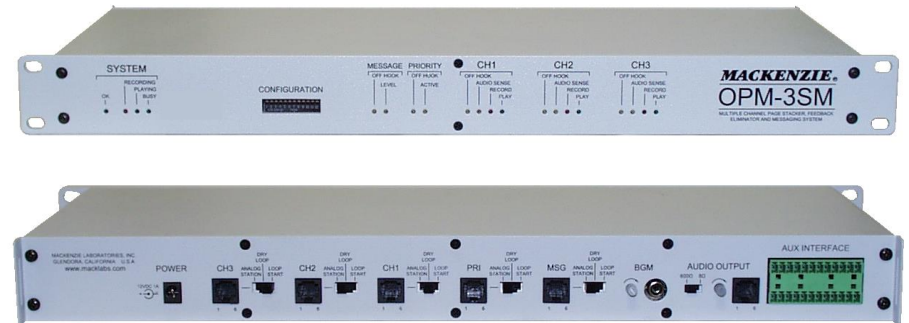
User's Manual
Version 1.4, Revised: 19, January 2016
Doc 99-20-067

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. A UL/CSA approved power pack is provided.
8. DO NOT staple or otherwise attach the power supply cord to building surface.
9. DO NOT use the product near or in wet or damp places, such as wet basements.
10. DO NOT use extension cords. Install within six feet of a grounded outlet receptacle.
11. DO NOT install during lightning storm.
12. Never touch un-insulated wires or terminals unless the unit is disconnected from both power and the rest of the phone system.
13. Use Caution when installing or modifying configuration switches or control lines.
14. The unit must be securely attached to a wall board, rack or table mounted.

⚠ **CAUTION:** If any wiring from the system leaves the premises, you must use proper electrical protectors.

Regulations:

FCC (Part 15) Radio Frequency Interference

The OPM-3SM 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.

Warranty & Registration Card for the
OPM-3SM - Page Stacker & Feedback Eliminator

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

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Table of Contents

Shipping Container Contents

The following items should be found in the container of OPM-3SM:

   ▪OPM-3SM System
   ▪Installation and User Guide
   ▪Mounting screws
   ▪Wall mounted power pack, 12VDC @ 1 amp

1. OVERVIEW

1.1 Features and Capabilities

The latest addition in Mackenzie's Overhead Page Management(OPM) series of products offers the increased functionality. The OPM-3SM is a comprehensive system that combines Page Stacking, Feedback Elimination, Pre-Recorded Messaging and Background Music control into a single device.

PAGE STACKING/FEEDBACK ELIMINATION: For busy overhead paging systems, the OPM-3SM offers 3 channels of page stacking and feedback elimination. Each channel can record and temporarily store up to 16 pages or 4 minutes of audio. Page input channels can record simultaneously, and while the system is playing.

PRIORITY PAGING: For emergencies, the OPM-3SM offers a priority input that overrides the stacking and messaging functions and provides immediate, real-time access to the paging system.

PRE-RECORDED MESSAGES: For security and general public address messaging, a pre-recorded messaging sub-system has been included. Access both Record and Play functions of up to 99 messages/8 minutes of audio from an extension on your host telephone system. Ten (10) start contacts have also been provided to trigger messages from external devices such as sensors or alarms.

BACKGROUND MUSIC: To keep everything in harmony, the OPM-3SM also includes a background music input. This allows playback of your favorite music source over the paging system. When a page or message is played, the background music will be muted and the announcement will be heard loud and clear.

9. WARRANTY, SERVICE & RETURNS

The industrial grade housing and quality construction of the Mackenzie OPM-3SM virtually eliminates the need for service or maintenance. There are no user-serviceable components within the Mackenzie OPM-3SM. Refer all servicing to the factory.

9.1 Warranty Coverage:

The Mackenzie OPM-3SM is tested and checked before shipment and is guaranteed against defective material or workmanship for a period of one (1) 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, at Mackenzie's discretion.

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 rights. 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

9.2 What we ask you to do:

To get warranty service for your OPM-3SM system, you must provide proof of the date of original purchase. In the event you need to ship your OPM-3SM system to the factory for service, call us for a return authorization number. When you ship your OPM-3SM 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 OPM-3SM system. When sending your OPM-3SM 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 OPM-3SM system, we will ship it to your return address at no cost to you within the USA. Repair or replacement of your OPM-3SM system at our factory is your exclusive remedy.

9.3 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.

1.2 General Specifications

AUDIO

Bandwidth	100Hz - 8kHz
Page Input	3, RJ12 connector, Station Port/Dry Loop/Loop Start
Priority Input	1, RJ12 connector, Station Port/Dry Loop/Loop Start
Messaging Input	1, RJ12 connector, Station Port/Dry Loop/Loop Start
Background Music Input	Line level input with level control
Page output	1, RJ12 connector, 8ohm power/600ohm line level(switch selectable), adjustable

PAGE STACKING

Message repeat	play one or two times, dip switch selectable
Delay between messages	1s, 3s, 5s, 10s dip selectable
Stack	up to 16 messages per input
DTMF	Store/forward(0,2,3 or 4 tones) dip selectable
Pre-Page Tone	dip selectable

POWER

Power Pack	12VDC @ 1 amp, UL and CSA

MEMORY

Type	FLASH
Page Stacking	4 min per page input channel
Messaging	8 min

MESSAGE CONTROL

# of messages	99
Record Control	DTMF control from messaging input
Play Control	Triggered from DTMF on messaging input or start contacts (10)

PAGE CONTROL

Priority	Control contact is offered on the Priority Input RJ connector
Page Inputs	3, Page Input RJ connector. Each input answers (loop, audio sense, DTMF)

STATUS OUTPUTS	Solid State Relay contacts 24VDC @ 100mA max	
Playing Contact	Offered on the Page Output RJ connector	
Record Contact	Offered on each Page Input RJ, as well as the Message Input RJ	

PACKAGE

Chassis:	Rack mount(1U)
Material:	18 gauge cold rolled steel, painted with silkscreen

2. INSTALLATION & CONFIGURATION

This section provides complete instructions for mounting the OPM-3SM in a rack or on a table. It also illustrates all interface requirements to auxiliary equipment, including inputs and outputs. Configuration switch settings are provided.

2.1 Installation Steps

These are the general steps for installation:

1. Find a space in a rack or on a table. Mount the unit to the selected place with it's wiring at least 18" away from the power supply or other equipment that generate electrical noise. Secure unit using the supplied mounting screws.
2. Make sure there is a standard electrical outlet into which you can plug the power pack. This outlet should NOT be controlled by a wall switch.
3. Make cable connections from the OPM-3SM to the PBX or audio source and the Paging system,
4. Set DIP switches to the desired operation.
5. Connect the power supply. System OK LED should illuminate GREEN.
6. Test unit operation.

2.2 Hardware Description

FRONT

The OPM-3SM is a standard 1U 19" rack mount chassis.

The front panel of the OPM-3SM provides user indications of the system status via LEDs. The description of each LED can be found in section 2.2.1 of this manual.

Configuration switches are also accessible on the front panel of the unit. The description of the various user configurable settings can be found in section 2.2.14 of this manual.

7. BACKGROUND MUSIC INPUT

The OPM-3SM allows for a background music source to be mixed with pages and pre-recorded messages. Background music is muted when pages or pre-recorded messages are played to the audio output. The BGM Level control allows you to optimize the level music sent to the audio output.

8. AUDIO OUTPUT

The audio output of the OPM-3SM is the audio interface for your zone controller, amplifier or public address system. All audio from the paging channels, priority input, messaging system and BGM input is routed to this output. The OPM-3SM manages stored pages on a first in, first out basis. This means that pages will be played in the order they were successfully completed and or triggered, independent of the particular input. Only the priority input has the ability to interrupt the playback queue. In the case of a priority page, the system will pause the playback queue during the priority page, and then continue when the page is complete.

4. QUEUE

The OPM-3SM incorporates a playback queue to manage the order that messages play. This queue will manage up to 32 pages. Pages are put into the queue on a first in, first out basis. The queue is compatible with pages from any of the three page channels and/or the messaging input. The priority input offers live, or direct, access to the output of the system. A priority page will pause the playback queue. When the priority session completes, the queue will continue from where it left off.

5. PRIORITY

The OPM-3SM offers a Priority input to gain immediate access to the public address system. Activation of priority halts the playback of recorded pages. When the priority page is completed, the OPM-3SM will resume playback from the beginning of the message that was interrupted. Priority Activation methods include Analog Station, Dry Loop and Loop Start. A valid connection via any of these methods provides direct access to the system. Status of the Record Activation switches is not relevant.

6. MESSAGING, PRE-RECORDED

The OPM-3SM offers a pre-recorded messaging system for quick and easy access to standard or frequently used pages. This system allows messages to be recorded and permanently stored in FLASH memory. Playback is provided via DTMF command or contact closure. The messaging portion of the OPM-3SM can store up to 99 messages in 8 minutes of memory.

DTMF Commands

Code	Name	Description
#	End	Use this function to stop recording or exit a command
*0	Stop	Stop playing all triggered messages
*3xx	Delete	Delete message at location xx
*5xx -or- xx	Play	Play message at location xx to the audio output
*6xx	Review	Listen to a message through the handset. Audio is NOT routed to the audio output
*7xx	Record	Record message into location xx. Recordings may only be made to empty message locations. To update a previously recorded message, make sure to delete it first.

Connect to the messaging system with the desired mode, analog station, dry loop or loop start. The Message Off Hook LED indicates that you are connected to the system in Loop Start or Analog Station mode.

A steady tone indicates a correctly executed and accepted command. A fast busy signal indicates an incorrectly executed command.

BACK

The back panel of the OPM-3SM provides all electrical connections to the device.   The connector type and signal descriptions are detailed later in this manual.

Individual configuration of each audio input / output port is provided next to each audio input connector.

Volume controls are provided for the BGM input and the audio output.

Flanges are provided on each side of the back panel of the OPM-3SM to provide strain relief to all the wiring routed to the OPM-3SM.

2.2.1 Status LED Indicators

All Status Indicators are located on the front panel of the unit. The different groups of LED indicators are described below:

2.2.1.1 System
The System indicators are global indicators that indicate that tell the user that a particular function is active on any, or all, of the inputs on the system.

System OK LED – Green indicates unit is ON. Flashing indicates an error condition, contact the factory for more information should this occur.
Recording LED - Red, indicates that a recording session is active on any one of the paging inputs.
Playing LED - Green, indicates that the audio output of the OPM-3SM is active due to a page playing back, or the priority input being active.
Busy LED - Yellow, indicates that any one of the paging inputs recording, playing, or in a delay mode. This LED is also active when a priority announcement is being made.

2.2.1.2 Message input
Messaging Input Off Hook LED - Yellow, indicates the messaging system is being accessed via a phone circuit. (Loop current flowing)
Messaging Input Level LED - Yellow, indicates audio signal is present on the Message Input.

2.2.1.3 Priority input
Priority Input Off Hook LED - Yellow, indicates the priority channel is being accessed via a phone circuit. (Loop current flowing)
Priority Input Active LED - Yellow, indicates the priority channel is active.

2.2.1.4 Paging Input Channels (Channel 1,2,3)

Off Hook LED - Yellow, indicates the priority channel is being accessed via a phone circuit. (Loop current flowing)

Audio Sense LED - Yellow, indicates audio signal is present on that particular Page port.

Record LED - Red, indicates that the particular Paging channel is recording a message.

**Play LED** - Green, indicates that the particular Paging channel is playing a message.

2.2.2 Power Input

Unit requires 12 VDC @ 1amp via the barrel connector. Only use the factory supplied power pack. The chassis is connected to negative side of power supply.

2.2.3 Audio/Control Input, Paging Channels 1 - 3

RJ12 style connector, 6 position. All pages to be recorded are input to the device through these connectors

1. Abort, stops and deletes the recording when connected to Ground (Pin 5).
2. Record input, connect to Ground(Pin 5) to activate. Unit records for duration of closure.
3. Audio, ring/return.
4. Audio, tip/signal.
5. System Ground, (power return).
6. Not used.

123456
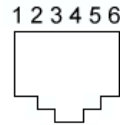
2.2.4 Port configuration Switch, Paging Channels 1 – 3, Priority Input, Message Input

A three position slide switch is provided for each of the five inputs from the paging system: Channel 1, 2, 3, Priority, and Message. The switch configures the particular port to meet the requirements of the paging system.

Analog Station - LEFT Position. Impedance 900 ohm, voltage for ring trip 75 - 105V (20 - 60Hz).

Dry Loop - Center Position. Configures audio input for 600ohm, line level (-10dB nominal).

Loop Start - RIGHT Position. Configures priority audio input for 900ohm and supplies 24VDC talk battery. Compatible with loop start trunk ports.

3.1 Page Recording

Upon receiving a valid recording signal, the OPM-3SM will start recording at the beginning of the memory until the page is complete. While this page is playing, new pages can still be recorded. Multiple pages will be recorded in series until the playing message has completed its play routine.

Multiple channels may be recording incoming pages at the same time. Playback order of pages is based on when the recording process is complete. For example, if a long message is being recorded on channel 1, and during that process a short message is recorded and completed on channel 2, the playback order will be the message on channel 2 then the message on channel 1.

3.2 Record Activation Methods

There are several methods to initiate automatic record mode on the OPM-3SM. The activation mode will be selected by the Setup Switches upon power up. It cannot be changed during normal operation.

Loop Current detect - Setup Switches 1=OFF, 2=OFF
If an input's input configuration switch is set for loop start mode, the OPM-3SM will source the talk battery(24VDC) to the ring and tip, and then sense the loop current when phone goes off hook and start the recording process for the duration of the page. Valid for Analog Station and Loop Start modes.

Audio Sense - Setup Switches 1=OFF, 2=ON
For record activation without a separate switch closure or loop current. The OPM-3SM will start recording when the audio sensor goes active and will stop when the audio sensor is inactive for three seconds. Valid for Analog Station, Loop Start and Dry Loop modes.

DTMF Activation - Setup Switches 1=ON, 2=OFF
For record activation without a separate switch closure and perhaps noisy audio lines. The OPM-3SM will start recording when it "sees" a valid DTMF tone and will stop when the audio sensor is inactive for three seconds. Valid for Analog Station and Loop Start modes. The DTMF tone used to activate the recording will be stripped and not output when the message is played.

Manual Recording - Available in all modes - Typically associated with Dry Loop mode, this method enables the OPM-3SM to begin recording with a switch closure between pins 2 and 5 of the RJ12 connector of a particular channel.

3.3 Playback

The OPM-3SM can be configured to automatically playback pages after their record process has completed. This mode is configured by setting Setup Switch 8 to OFF.

The OPM-3SM may be configured for manual or switch closure playback(Setup Switch 8=ON) when you want full control of when pages will playback. Playback is triggered via a momentary closure(100ms) between pins 1 and 5 of the Paging Control and Status Auxiliary Interface.

6	Not Used	Not Used
7	Busy Common	Common for the busy relay
8	Busy Relay	Activates when system is recording or playing a message.
9	Playing Common	Common for the Playing Relay.
10	Playing Relay	Activates when system is playing.
11	Recording Common	Common for the Recording Relay.
12	Recording Relay	Activates when the system is recording.

3. PAGE STACKING, FEEDBACK ELIMINATION OPERATION

The OPM-3SM offers 3 channels of page stacking, intended for busy paging systems with multiple inputs. Each channel performs the following functions:

1. It eliminates feedback by recording the incoming page(s), then playing them back after the user "hangs up", eliminating any feedback loop.
2. It is able to repeat each page allowing for better intelligibility in a noisy environment.
3. It is capable of stacking up to 16 incoming pages per channel by recording incoming pages while playing back previously recorded ones on a first-in first-out basis.

Constraints:

-Each page is allowed a maximum of 1 minute recording time. Pages exceeding this will be aborted and a busy back tone is generated.
-Recordings that reach the end of memory are considered incomplete. These pages are aborted and a busy back tone is generated. If the memory is filled and a new recording command is offered, the OPM-3SM will not go into record mode and a busy back tone will be output to tell the user that the system not available.
-The recorded message must be a minimum of one second in length. Any message shorter than this will be aborted.
-The OPM-3SM aborts pages that are comprised of 3 or more seconds of silence. The page is deleted and a busy back tone is generated.

Other important features include the ability to Record/Regenerate, or Block DTMF tones for use in zone controller applications.

The OPM-3SM is designed to run in both Automatic and Manual modes. For paging applications the Automatic mode is the most widely used. This mode requires minimum installation time since it is the factory's default setup. RJ12 connectors are used for Audio inputs and outputs. Where logical, certain control signals are also provided on the individual RJ12 connectors associated with each input.

2.2.5 Priority Audio/Control Input

RJ12 style connector, 6 position. Priority pages are input to the device through this connector.

1. Not used.
2. PRIORITY input, connect to Ground (Pin 5) to activate. Priority active for duration of closure.
3. PRIORITY Audio, ring/return.
4. PRIORITY Audio, tip/signal.
5. Ground. (power return).
6. Not used.
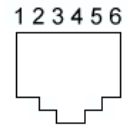
2.2.7 Messaging Audio/Control Input

Input, RJ12 style connector, 6 position. Operation of the messaging portion of the system is provided through this interface.

1. Not used.
2. Not used.
3. Audio, ring/return.
4. Audio, tip/signal.
5. Not used.
6. Not used.
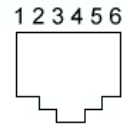
2.2.9 Background Music Input Volume

Controls the background music input volume level delivered to the audio output. Adjusting this input clockwise increases the level, and counter-clockwise rotation decreases the level of the background music.

2.2.10 Background Music Input

RCA jack, Input audio level should be set to a nominal level of 0dBv, or less. Tip is audio signal and sleeve is audio return.

Any audio input at this port will be fed through the system to the audio output whenever the system is idle.

2.2.11 Audio Output Mode Switch

A two position slide switch allows the user to configure the audio output to match the needs of their downstream equipment.

The RIGHT position sets the output to line level (+4dB/600ohm). Use this position as default.

The LEFT position sets the output to power level (500mW/8ohm). Use this for longer runs, or if not enough level can be reached with the line level output.

2.2.12 Output Volume

Controls the audio output volume level delivered to the paging system. It is shipped with 1:1 gain factory set.

Adjusting this input clockwise increases the level, and counter-clockwise rotation decreases the level of the device

2.2.13 System Audio/Control Output

Output, RJ12 style connector, 6 position. All audio from the OPM-3SM is output through this port

1. Not used.
2. Playing Relay, Normally Open.
3. Audio Return.
4. Audio Signal.
5. Playing Relay, Common.
6. Not used.

1 2 3 4 5 6
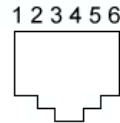
The playing relay contacts available on this connector are paralleled with the connections on the Paging Control and Status Auxiliary Interface, positions 9 and 10.

Delay Between Plays

To make the page sequence more intelligible, a pause can be inserted between each message in the playback sequence as well as between any repeats of each message.

	11	12	
	☐	☐	*1 second
	☐	☐	3 seconds
	☐	☐	5 seconds
	☐	☐	10 seconds

2.2.15 Messaging Playback Auxiliary Interface

Top row of 12 inputs on the Auxiliary Interface. This interface allows playback of pre-recorded messages through a momentary closure (100ms). Each closure between a Play input and Ground will play the corresponding message one time. Multiple closures on a single input or several inputs will queue the messages and the system will play them in the order received.

12 position Euro-style, two piece, pluggable type.

Pin	Name	Description
1	Ground	Common
2	Play 1	Plays message 1 when connected to ground
3	Play 2	Plays message 2 when connected to ground
4	Play 3	Plays message 3 when connected to ground
5	Play 4	Plays message 4 when connected to ground
6	Play 5	Plays message 5 when connected to ground
7	Play 6	Plays message 6 when connected to ground
8	Play 7	Plays message 7 when connected to ground
9	Play 8	Plays message 8 when connected to ground
10	Play 9	Plays message 9 when connected to ground
11	Play 10	Plays message 10 when connected to ground
12	Not Used	Not Used

2.2.16 Paging Control and Status Auxiliary Interface

Bottom row of 12 inputs on the Auxiliary Interface. Allows manual access to many of the common inputs and status outputs of the system.

12 position Euro-style, two piece, pluggable type.

Pin	Name	Description
1	Ground	Common
2	Not Used	Not Used
3	Priority	Initiates priority page when connected to ground.
4	Stop	Stops any currently playing message when connected to ground.
5	Play	Plays next message in queue when connected to ground.

DTMF Tone Stripping Method   4

This setting determines how and where the DTMF tones coming from audio input, during a recording, are processed. Tones can be stripped only at the beginning of the message or at the middle of the message. If the tones recorded page are stripped in the middle of the message all recorded information preceding those tones will be deleted, resetting the message start.

☐ *Strip only tones at the start of a recorded page.

☐ Strip any tones in message and restart recording message.

DTMF Allotment   5   6

Most paging systems require a limited number of tones to be recorded because of zone controlling equipment. If the selected number of tones is exceeded the OPM-3SM will abort that particular recording.

☐ ☐ *Unlimited number of DTMF tones
☐ ☐ 4 tones
☐ ☐ 3 tones
☐ ☐ 2 tones

Abort   7

This would allow a caller to abort a page being recorded by pressing the "#" button two times within one second. The recording will immediately be aborted and the busy back tone sent to the input. A single "#" sign during the recording will not have any effect.

☐ *Enable
☐ Disable

Play Mode   8

Allows for automatic playback of page after recording.

☐ *Auto Play
☐ Manual

Pre-page Tone   9

A pre-recorded tone can be output prior to message playback. This is used to alert listeners that a message is about to be played. This tone will be output before each message in the playback queue but not before the repeated plays.

☐ *Disable
☐ Enable

Number of Plays   10

The number of times which each message plays during the playback sequence. If multiple messages were recorded into the queue, each message will play this number of times.

☐ * Play once
☐ Play twice

2.2.14 Configuration Switches

12 position DIP Switch: UP position is OFF, DOWN position is ON. * indicates factory Default Setting. Settings are scanned on power up. Power must be cycled for changes to take effect.
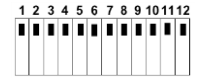
Record Activation Method   1   2

The method with which the user will enter the record mode.

☐ ☐ *Off Hook(Loop Current) - The system will record when the system senses loop current

☐ ☐ Audio Sensor - The system will start recording when the audio sensor goes active and will stop when the audio sensor is inactive for 3 seconds.

☐ ☐ DTMF - The system will start recording when it detects a valid DTMF tone and will stop when the audio sensor is inactive for 3 seconds.

☐ ☐ Not in use

NOTE: Record Input activation is always available regardless of switch settings. A maintained contact closure on any channel's record input will start the recording process on that channel for the duration of the closure.

DTMF Tone Stripping   3

DTMF tones recorded at the beginning of an audio message are typically used for zone control purposes. A repeated page should not have the zone control tones on the front end of the second page because the zone controller is already routed, therefore these tones will be stripped on the repeat of a page. DTMF tones at the beginning of the page would be handled in this fashion. Any DTMF tones recorded in the middle of the message would be recorded and played back in the typical manner.
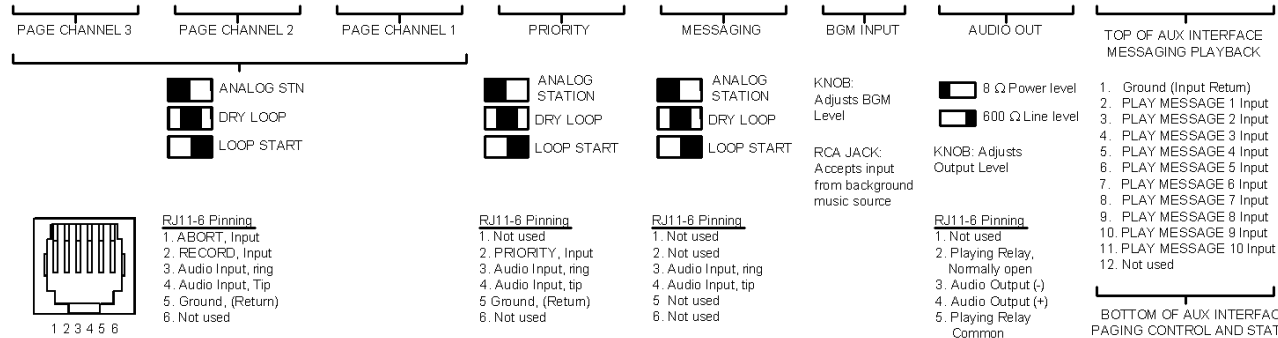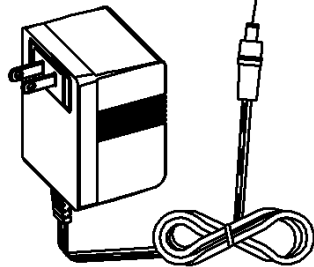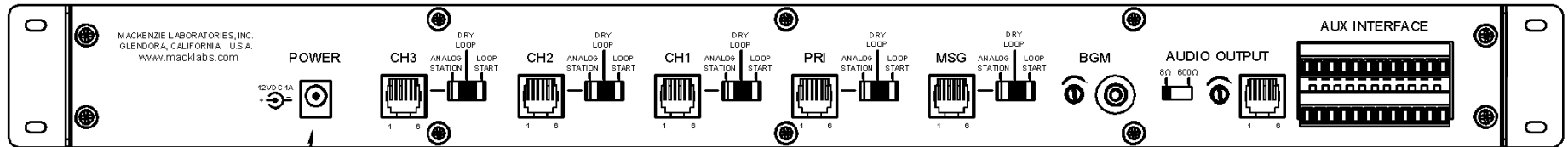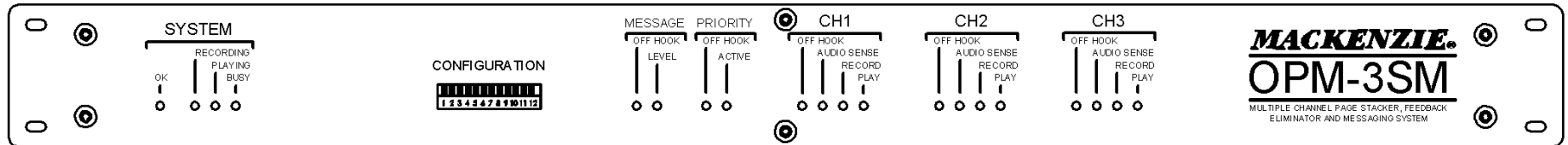
☐ *Active
☐ Not Active

OFF ■ ON ★=Default Setting

1 2 RECORD Activation
★ Off Hook (loop current)
Audio Sensor
DTMF
Not in Use

3 DTMF Tone Stripping
★ Active
Not - active

4 DTMF Stripping Method
★ Strip only tones at start of a recorded page.
Strip any tones in messages, and restart recording message.

5 6 DTMF Allotment
★ Unlimited
4 tones
3 tones
2 tones

7 "#,#" Abort Enable
★ Active
Inhibit

8 Play Mode
★ Automatic
Manual

9 Pre-Page Tone
★ Not Active
Active

10 Number of Plays
★ Play message one time
Play message two times.

11 12 Delays Between Plays
★ 1 second (Minimum)
3 seconds
5 seconds
10 seconds

SYSTEM STATUS INDICATORS
ON = ACTIVE

SETUP SWITCHES

INDIVIDUAL AUDIO CHANNEL STATUS INDICATORS
ON = ACTIVE

SYSTEM
RECORDING
PLAYING
OK   BUSY

CONFIGURATION
1 2 3 4 5 6 7 8 9 10 11 12

MESSAGE   PRIORITY   **CH1**   **CH2**   **CH3**
OFF HOOK OFF HOOK   OFF HOOK   OFF HOOK   OFF HOOK
LEVEL   ACTIVE   AUDIO SENSE AUDIO SENSE AUDIO SENSE
                     RECORD   RECORD   RECORD
                     PLAY   PLAY   PLAY

MACKENZIE®
OPM-3SM
MULTIPLE CHANNEL PAGE STACKER, FEEDBACK
ELIMINATOR AND MESSAGING SYSTEM

MACKENZIE LABORATORIES, INC.
GLENDORA, CALIFORNIA U.S.A.
www.macklabs.com

POWER
12VDC 1A

CH3   DRY LOOP   CH2   DRY LOOP   CH1   DRY LOOP   PRI   DRY LOOP   MSG   DRY LOOP   BGM   AUDIO OUTPUT   AUX INTERFACE
ANALOG STATION LOOP START

8Ω 600Ω

1   6

PAGE CHANNEL 3   PAGE CHANNEL 2   PAGE CHANNEL 1   PRIORITY   MESSAGING   BGM INPUT   AUDIO OUT   TOP OF AUX INTERFACE
MESSAGING PLAYBACK

ANALOG STN
DRY LOOP
LOOP START

ANALOG STATION
DRY LOOP
LOOP START

ANALOG STATION
DRY LOOP
LOOP START

KNOB:
Adjusts BGM Level

RCA JACK:
Accepts input from background music source

8 Ω Power level
600 Ω Line level

KNOB: Adjusts
Output Level

RJ11-6 Pinning
1. Not used
2. Playing Relay, Normally open
3. Audio Output (-)
4. Audio Output (+)
5. Playing Relay Common
6. Not used

1. Ground (Input Return)
2. PLAY MESSAGE 1 Input
3. PLAY MESSAGE 2 Input
4. PLAY MESSAGE 3 Input
5. PLAY MESSAGE 4 Input
6. PLAY MESSAGE 5 Input
7. PLAY MESSAGE 6 Input
8. PLAY MESSAGE 7 Input
9. PLAY MESSAGE 8 Input
10. PLAY MESSAGE 9 Input
11. PLAY MESSAGE 10 Input
12. Not used

RJ11-6 Pinning
1. ABORT, Input
2. RECORD, Input
3. Audio Input, ring
4. Audio Input, Tip
5. Ground, (Return)
6. Not used

1 2 3 4 5 6

RJ11-6 Pinning
1. Not used
2. PRIORITY, Input
3. Audio Input, ring
4. Audio Input, tip
5 Ground, (Return)
6. Not used

RJ11-6 Pinning
1. Not used
2. Not used
3. Audio Input, ring
4. Audio Input, tip
5. Not used
6. Not used

BOTTOM OF AUX INTERFACE
PAGING CONTROL AND STATUS

1. Ground (Input Return)
2. Not used
3. PRIORITY Input
4. STOP Input
5. PLAY Input
6. Not used
7. BUSY Relay, Common
8. BUSY Relay, Normally open
9. PLAYING Relay, Common
10. PLAYING Relay, Normally open
11. RECORDING Relay, Common
12. RECORDING Relay, Normally open