Issue 5

V-9964
Digital Feedback Eliminator/Message Stacker

General Design

The V-9964 is designed to eliminate acoustic feedback and act as a message stacker. When a page is made, the message is digitized and saved. Upon completion of the live page, the message is released for broadcast over the speakers. While a message is being broadcast, additional messages may be recorded with a maximum of 4 messages queued per V-9964. Additionally, up to four V-9964 units may be chained together to allow up to sixteen messages to be simultaneously processed.

Specifications

Features

- Automatic Gain Control (AGC)
- Adjustable VOX sensitivity
- Compatible with Valcom Multi-Zone Control Units and Station Adaptors
- Two input channels: Switch selectable primary and priority, or two channels with equal priority; both inputs are switch selectable for Loop Start or VOX operation
- Two audio outputs:
  600 Ohms with loop supervision to a page control unit or 8 Ohms line level output to amplified speakers
- Background music input
- Total of three normally open relay contacts for PLAY, RECORD and BUSY mode (one contact each)
- LED status indicators for POWER, RECORD, PLAY and BUSY
- Dip switch option programming
- Message abort feature

Access

- Vacant Loop Start Trunk Port or C. O. Line Port
- Page Port
- Line Level Audio Feed
- An adaptor is required for C. O. Line or station access (see V-9970 or V-9940)

Dimensions/Weight

- 11.76" H x 7.10" W x 1.72" D
  (29.87cm H x 18.03cm W x .37cmD)
- 2.6 lbs. (1.18Kg)

Nominal Specifications

Power requirements:	24VDC 200mA filtered
Input impedance:	600 Ohms
Input level:	-10dBm
Loop Output impedance:	600 Ohms
Line Output impedance:	8 Ohms
Output level:	-10dBm
VOX sensitivity:	3 seconds after last sensed audio
Maximum recorded page time:	58 seconds

(28 seconds per V-9964 in call stacker Mode)

Frequency response:

Page:	80Hz to 7kHz
Background Music:	50Hz to 17kHz

Environment

Temperature:	0 to +40°C
Humidity:	0 to 80% non-precipitating

FCC Information

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference in which case the user will be required to correct the interference at his own expense.

Installation/Connection

Cabling

Category 3 or 5 twisted pair cable is recommended for all Valcom distributed amplified paging installations. Screw terminals are provided for the basic connections. RJ45 jacks are provided for chaining multiple V-9964 units together. Removing the narrow right side panel of the V-9964 provides access to controls, connections and option switches. To remove the panel, loosen the two screws holding the panel in place and lift the panel.

Mounting

The V-9964 may be wall mounted or rack mounted in a standard 19 inch equipment rack using the brackets included.

Connections

See Figure 1 for a connection diagram.

Tip 1, Ring 1

INPUT 1 is the normal Primary or Call Stacker system input, and connects to a Loop Start Trunk Port, 600 Ohm Page Port or some Valcom Page Controls.
Note: Do not connect to a C. O. Line.

Control Input 1

Provides contact closure activation when using a Page Port.

Tip 2, Ring 2

INPUT 2 is the Override page or Call Stacker line two input. If desired, connect this to a second Loop Start Trunk Port or Page Port.
Note: Do not connect to a C. O. Line.

Control Input 2

Provides contact closure activation when using a Page Port.

Background Music Input

Connection for external line level music source (Example: V-2952, FM Tuner).

NOTE: If using multiple V-9964 units in a chained configuration, all speakers must connect to the output of the last unit in the chain.

Line Out

Output connections to Valcom amplified speakers or 70 Volt amplifier Aux input.

Loop Out

Connects to Tip and Ring input on a Valcom multi-zone page control unit.

Expansion In

RJ45 connection from the previous V-9964 in a chained configuration.

Expansion Out

RJ45 connection to the next V-9964 in a chained configuration. Closing a switch connected to pin 7 and pin 3 of either Expansion In or Expansion Out will hold all queued recorded messages, on all linked V-9964s. During this time, additional messages may still be recorded into the V-9964(s). Once the switch is opened, all queued messages, including DTMF, will play in their entirety.

Abort

To abort a message during play, connect an external relay contact across the two abort terminals.
NOTE: To abort a message during the record sequence, press any DTMF button on the dial pad of the access telephone.

Relay Closure Outputs

(PLAY) PLYSW and PLYMK
Normally open relay contact that closes while a message is being broadcast.

(RECORD) RECSW and RECMK
Normally open relay contact that closes while a message is being recorded.

(BUSY) BSYSW and BSYMK
Normally open relay contact that closes when the unit cannot accept any more messages.

Switches and Controls

NOTE: (OFF-Left) (ON-Right)
Refer to figure one for locations.

SW1: Tip 1 Ring 1

No Battery Feed (Page Port)	OFF
Battery Feed supplied (Loop Trunk Port)	ON

SW2: Tip 2 Ring 2

No Battery Feed (Page Port)	OFF
Battery Feed supplied (Loop Trunk Port)	ON

SW5: VOX Sensitivity
Sets audio detection threshold for input ports. SW4-1 or SW4-2 must be in the **"ON"** position for this adjustment to be effective.

SW5	Level
0	-20dBm
1	-21dBm
2	-22dBm
3	-23dBm
4	-24dBm
5	-25dBm
6	-26dBm
7	-27dBm

SW5	Level
8	-28dBm
9	-29dBm
A	-30dBm
B	-31dBm
C	-32dBm
D	-33dBm
E	-34dBm
F *	-35dB

*Typical Setting

Program DIP Switch Settings

NOTE: (ON-Left) (OFF-Right)

SW3-1: DTMF Signaling Options

No DTMF signaling (single zone)	OFF
DTMF signaling (multi-zone)	ON

SW3-2, SW3-3: Number of Digits to Receive Before Recording the Page.

1 Digit	SW3-2 OFF	SW3-3 OFF
2 Digits	SW3-2 ON	SW3-3 OFF
3 Digits	SW3-2 OFF	SW3-3 ON
4 Digits	SW3-2 ON	SW3-3 ON

SW3-4: Priority Port Options
Leave in "**OFF**" position when used as a Call Stacker (SW4-4 is "ON").

Records Primary and Priority pages; Priority page broadcast first	OFF
Priority page broadcast in real-time; Primary page in progress is recorded and broadcast after Priority page	ON

SW3-5: Message Playback Control

Play message once	OFF
Play message twice	ON

SW3-6, SW3-7: Pre-page Alert Tones

No tones	SW3-6 OFF	SW3-7 OFF
Single tone	SW3-6 ON	SW3-7 OFF
Dual tone	SW3-6 OFF	SW3-7 ON
Quad tone	SW3-6 ON	SW3-7 ON

SW3-8: Inter-page Timing

1 Second between pages	OFF
3 Seconds between pages	ON

SW4-1: Primary or Line 1 Page Access

Loop detect	OFF
Audio detect	ON

SW4-2: Priority or Line 2 Page Access

Loop detect	OFF
Audio detect	ON

SW4-3: Pre-Record Ready Tone

Normal (3 seconds delay) with ready to record tone	OFF
No pre-record tone; allows immediate recording activation	ON

Note: This option is effective only when the inputs are set for LOOP start (SW4-1 OFF).

SW4-4: Normal or Call Stacker Mode

2 Inputs-Primary and Priority	OFF
2 Inputs will function as Call Stacker	ON

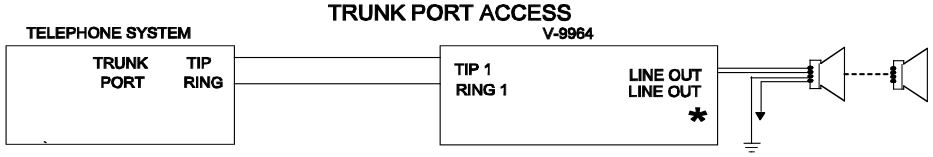
Note: Only one Priority port may be used on a Multi V-9964 system.

SW4-8 Output Control

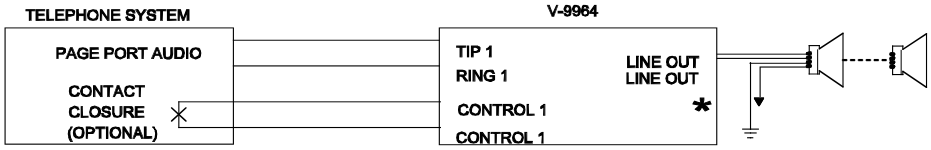
Slave unit in a Chained system; Multiple V-9964	OFF
Single unit or Master in a Chained system	ON

SINGLE ZONE CONNECTIONS

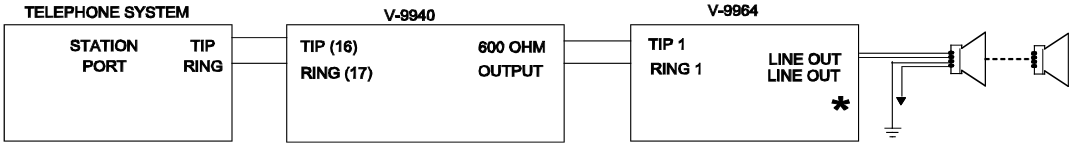
TRUNK PORT ACCESS



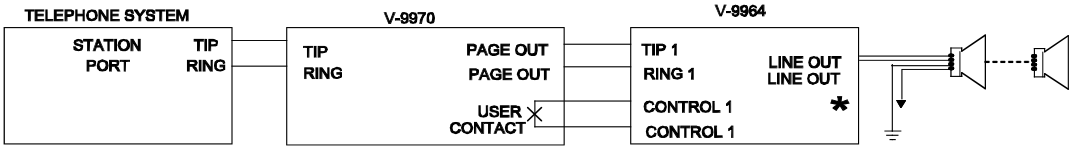
PAGE PORT ACCESS



STATION PORT ACCESS WITH V-9940



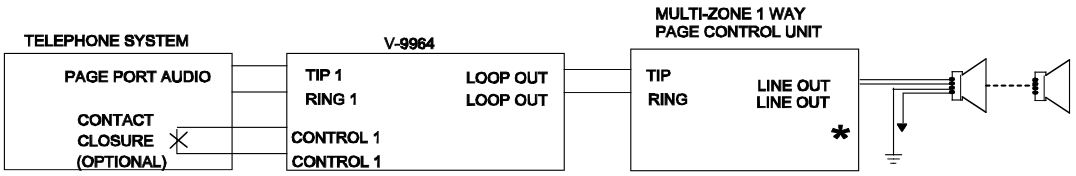
STATION PORT ACCESS WITH V-9970



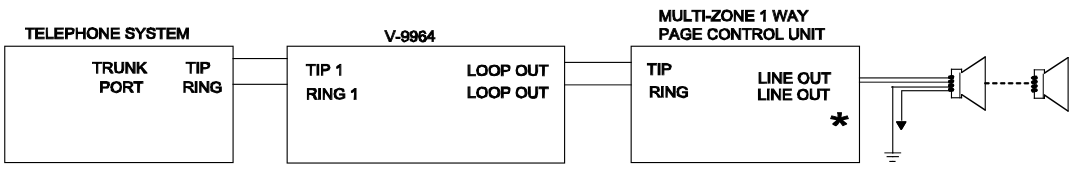
* Note: Line Out can also connect to Tel or Aux. Input of 70 Volt Amplifiers

MULTI-ZONE CONNECTIONS

PAGE PORT ACCESS WITH MULT-ZONE PAGE CONTROL



TRUNK PORT ACCESS WITH MULT-ZONE PAGE CONTROL



* Note: Line Out can also connect to Tel or Aux. Input of 70 Volt Amplifiers

Technical Assistance

When trouble is reported, verify the unit is turned on and there are no broken connections leading to the unit.

Assistance in troubleshooting is available from the factory. When calling from the job site, you should have a Volt/Ohm Meter and a telephone test set available for testing. Call (540) 563-2000, press 1 for Technical Support, or visit our Website at http://www.valcom.com.

Valcom equipment is not field repairable. Valcom maintains service facilities in Roanoke, VA. Should repairs be necessary, clearly tag the unit with your company name, address, telephone number, contact person and a description of the problem. Send the unit to:

Valcom Inc.
Repair and Return Department
5614 Hollins Road
Roanoke, VA 24019-5056

WARRANTY

Warranty information may be found on our website at www.valcom.com/warranty.

Switch Options

SW4

		ON	OFF
8	Output Control	MASTER UNIT	CHAINED UNIT
7	NOT USED	NOT USED	NOT USED
6	NOT USED	NOT USED	NOT USED
5	NOT USED	NOT USED	NOT USED
4	System Mode	CALL STACKER	PRIMARY / PRIORITY
3	Tones	NO TONES	PRE-RECORD TONE
2	Priority Input	AUDIO DETECT	LOOP DETECT
1	Primary Input	AUDIO DETECT	LOOP DETECT

SW3

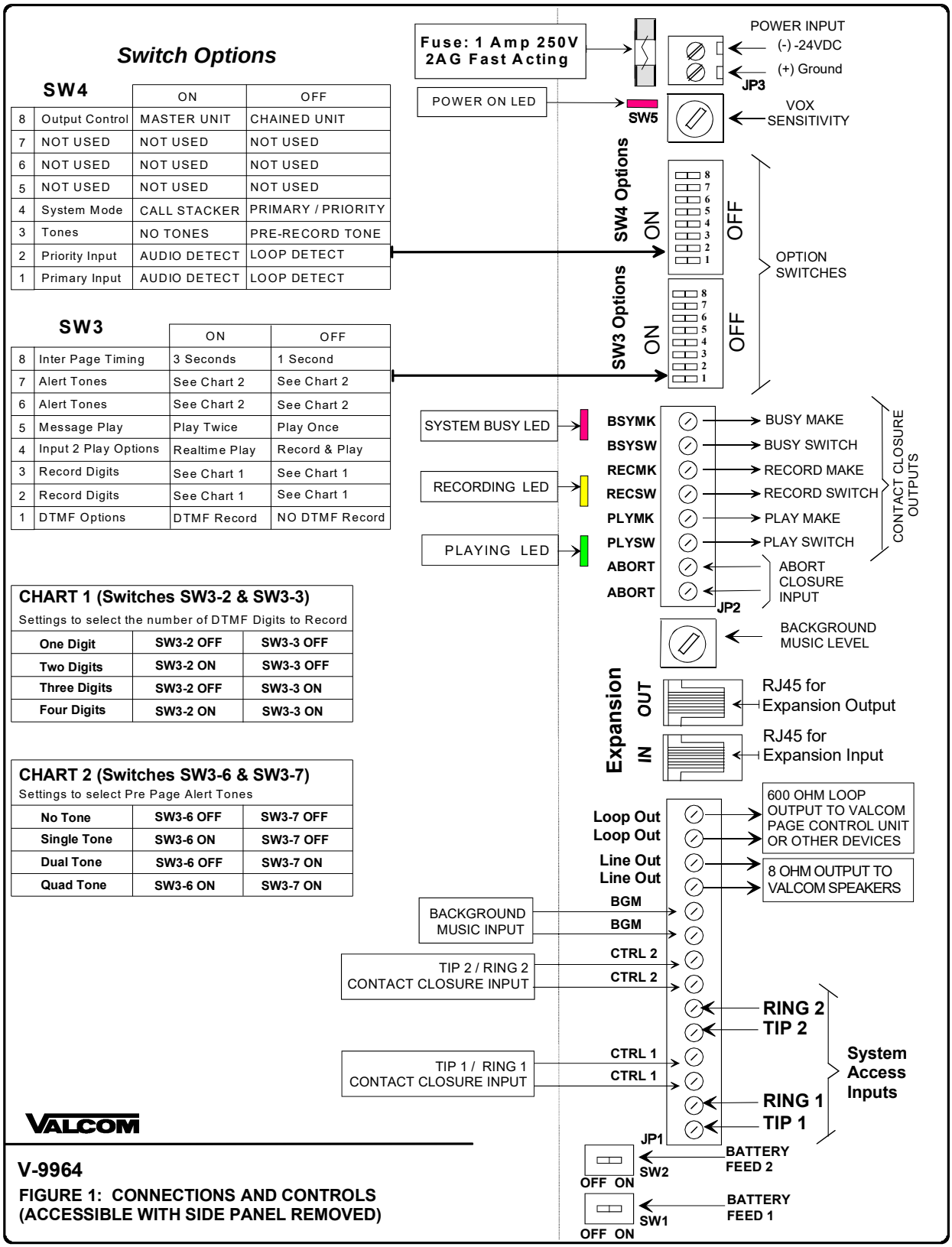
		ON	OFF
8	Inter Page Timing	3 Seconds	1 Second
7	Alert Tones	See Chart 2	See Chart 2
6	Alert Tones	See Chart 2	See Chart 2
5	Message Play	Play Twice	Play Once
4	Input 2 Play Options	Realtime Play	Record & Play
3	Record Digits	See Chart 1	See Chart 1
2	Record Digits	See Chart 1	See Chart 1
1	DTMF Options	DTMF Record	NO DTMF Record

CHART 1 (Switches SW3-2 & SW3-3)
Settings to select the number of DTMF Digits to Record

One Digit	**SW3-2 OFF**	**SW3-3 OFF**
Two Digits	**SW3-2 ON**	**SW3-3 OFF**
Three Digits	**SW3-2 OFF**	**SW3-3 ON**
Four Digits	**SW3-2 ON**	**SW3-3 ON**

CHART 2 (Switches SW3-6 & SW3-7)
Settings to select Pre Page Alert Tones

No Tone	**SW3-6 OFF**	**SW3-7 OFF**
Single Tone	**SW3-6 ON**	**SW3-7 OFF**
Dual Tone	**SW3-6 OFF**	**SW3-7 ON**
Quad Tone	**SW3-6 ON**	**SW3-7 ON**



V-9964

FIGURE 1: CONNECTIONS AND CONTROLS (ACCESSIBLE WITH SIDE PANEL REMOVED)