

## V-9927A DIGITAL MULTI-TONE GENERATOR

### INTRODUCTION

The V-9927A was designed with ease of installation and flexibility in mind. Connections are by screw terminals located on the edge of the PCB. The various options and tones are set using option blocks located inside the enclosure on the PC Board.

The V-9927A is a microprocessor controlled multi-tone generator capable of producing a variety of tone signals for various applications. It is functional and backward compatible with the previous V-9927.

**Note: Double check all wiring as connections to the unit are different.**

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this 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 is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

### SPECIFICATIONS

#### Power Requirements:

-24VDC "B" Battery at 100mA

#### Operating Environment:

Temperature: 0 to +50° C

Humidity: 0 to 85% (non-condensing)

#### Nominal Input/Output Specifications:

Input Impedance: 600 Ohms

Output Impedance: Less than 4 Ohms

Min. Output Load Impedance: 20 Ohms

Audio Input: 0dBm nominal

Maximum Tone Output: > 0dBm single tone

#### Physical Dimensions:

8.20"H X 4.55"W X 2.30"D  
(20.83cm H x 11.56cm W x 5.84cm D)

Weight: 1.5 lbs (0.68 kg)



### INSTALLATION

Product is intended for wall mounting only. When mounting, open enclosure and remove circuit board. Screw back of enclosure to backboard near the telephone system common equipment. Snap circuit board back in place. **Both mounting holes must be utilized to insure secure mounting of the unit.**

Make connections and set tones, using option blocks, as required for the specific application. Refer to Tone Table on page 2 for tone descriptions.

Replace cover and plug in power supply.

### OPERATION

#### All Tones (Except Code Call)

Operation of the V-9927A is accomplished by applying a connection between the COM (Common) terminal on the terminal block and the desired tone number (1-8).

The Tone selected by terminal number 1 has priority over others. If multiple tone inputs are being used, it is possible to sequence tones by closing the appropriate contacts in the desired sequence. However, Tone number 1 will always be placed first on the list when it has been activated.

If multiple tones are selected at the same time, the LOWEST tone number will have priority. If the lowest contact is open, then the next lowest tone number will be activated.

When a Tone is activated the INPUT source will be faded out in 0.75 seconds if P5 is out or will be faded out in 0.25 seconds if P5 is IN.

The V-9927A has a buffer for 32 tones. If more than 32 tones are entered within a short period, the V-9927A will drop the last tone entered.

Figure 2 illustrates several of the ways the V-9927A can be used with other Valcom equipment.

## Code Call Operation

When the V-9927A is connected to the V-9923A code call unit, the V-9927A will respond to the contact closure inputs and issue single chimes in response (see Figure 2).

At the beginning of a Code Call sequence, the INPUT source will be faded down about 6dB. It will remain at this level until the CODE CALL sequence has completed (including the interdigit time). At that

time, the INPUT source will be faded back up to normal level.

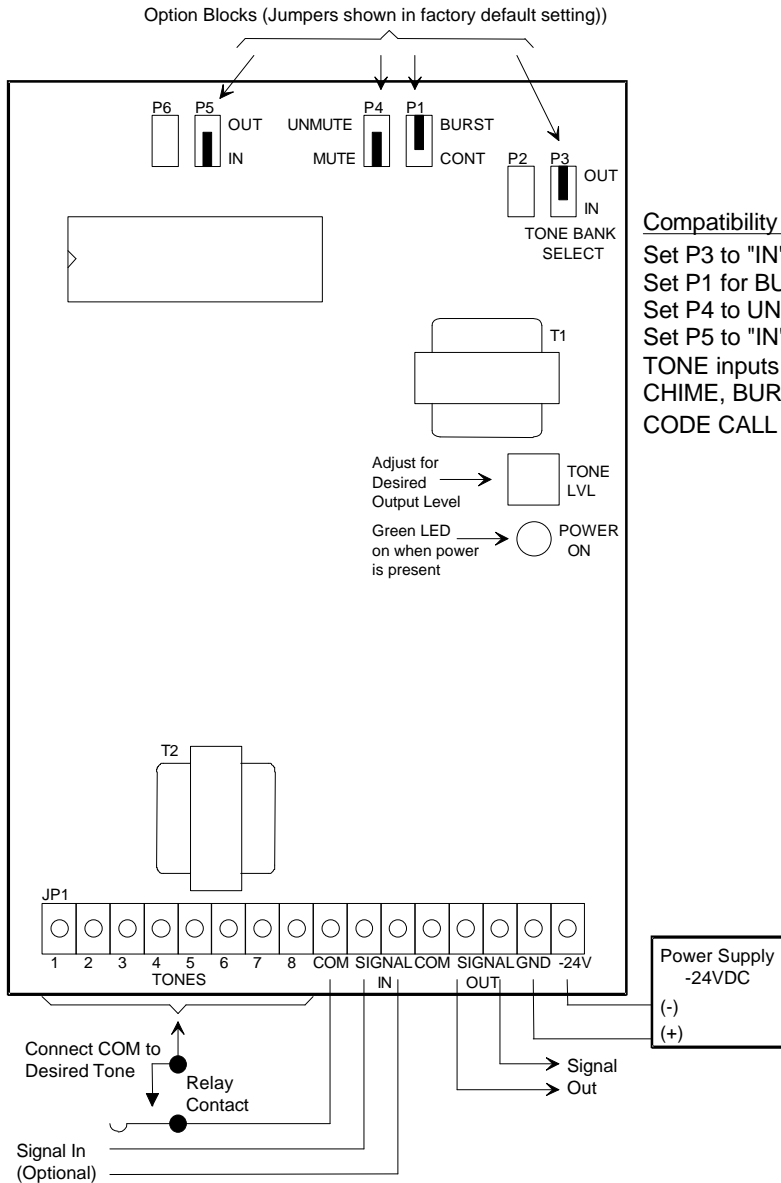
When using the CODE CALL option with other tone options, the CODE CALL may be interrupted to place other tones in the sequence (including Tone number 1 with higher priority). However, the CODE CALL may be out of sequence for the period that this occurs.

**TONE TABLE**

CONNECTION ON	OPTION BLOCK	DESCRIPTION
<b>JP1</b>	<b>P3</b>	
COM - TONE 1	IN	* WHOOP, 698Hz, 3.9 seconds (approx.) 2 cycle minimum
COM - TONE 2	IN	* DUAL CHIME, 880Hz/698Hz
COM - TONE 3	IN	* BURST, 880Hz, 1/2 second on, 2 seconds minimum
COM - TONE 4	IN	* STEADY, 880Hz, 3 seconds minimum
COM - TONE 5	IN	TeleBell 986/784Hz, 11 per second, 10 minimum
COM - TONE 6	IN	Chimes, 986, 784, 659, 523Hz order
COM - TONE 7	IN	Chimes, 880, 698, 587, 494Hz order
COM - TONE 8	IN	CODE CALL CHIME, 784Hz (V-9923A standard)
COM - TONE 1	OUT	> SIREN, 659Hz, center 1 cycle (approx.) 0.3Hz
COM - TONE 2	OUT	> WHOOP (yelp) 659Hz, 2.5Hz, 4 minimum
COM - TONE 3	OUT	> WARBLE, 494/986Hz, 6Hz rate
COM - TONE 4	OUT	> STEADY 698Hz, 1 second minimum
COM - TONE 5	OUT	> BURST (pulse), 494Hz, 4.5Hz rate
COM - TONE 6	OUT	Chimes 659/784Hz
COM - TONE 7	OUT	Chimes 986/784Hz
COM - TONE 8	OUT	CODE CALL CHIME, 784Hz (V-9923A Standard)

**NOTE:** \* denotes V-9927 compatible tones

> denotes "USA Standard Immediate Evacuation signal for industrial areas"



**FIGURE 1**

Compatibility with the V-9927

Set P3 to "IN" position  
 Set P1 for BURST or CONT as required  
 Set P4 to UNMUTE  
 Set P5 to "IN"  
 TONE inputs 1-4 correspond to WHOOP, CHIME, BURST, and STEADY.  
 CODE CALL is available on TONE input 8.

Description of Jumpers

P1 (BURST/CONT) - Sets the mode of the V-9927A. The BURST function allows one (1) tone (or sequence) for each closure of the TONES input. The CONT function is continuous; the tone (or sequence) will repeat while the closure on the TONES input (1-8) remains activated.

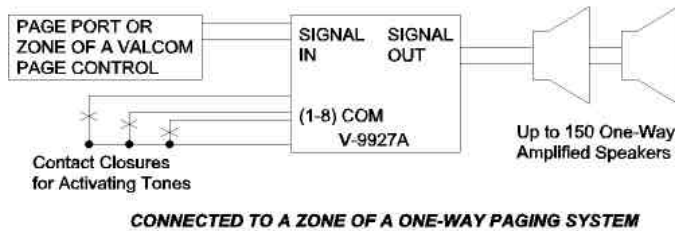
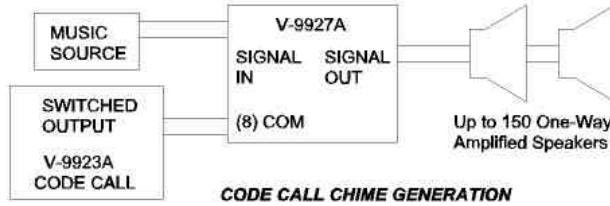
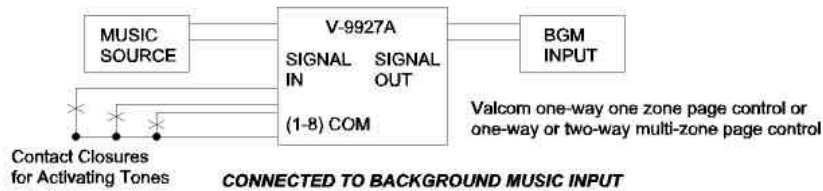
P3 (TONE BANK Select; OUT/IN) - Activates tones. Refer to the Tone Table (page 2) to determine jumper placement for the desired tones.

P4 (UNMUTE/MUTE) - Determines if SIGNAL IN is muted or unmuted. With UNMUTE selected, the signal returns after completion of a designated tone (or sequence) even if the relay on the TONES input (1-8) remains connected. With MUTE selected, the signal remains off after completion of tones even if the relay on the TONES input (1-8) is connected.

P5 (OUT/IN) - Determines the fadeout duration of the Input Source. The INPUT source will be faded out in 0.7 seconds if P5 is OUT or will be faded out in 0.25 seconds if P5 is IN.

P2 & P6 - Not used on this version.

**FIGURE 2 - TYPICAL USES FOR THE V-9927A**



## TECHNICAL ASSISTANCE

When trouble is reported, verify the unit in question is turned on (the green ON LED should be observed) and all connections are secure. Assistance in troubleshooting is available from the factory. When calling, you should have a VOM available and be calling from the job site. Call (540) 563-2000 for Technical Support or call (540) 767-1555 for Valcom 24-hour Faxback System 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, attach a tag to the unit clearly stating company name, address, phone number, contact person and the nature of the problem. Send the unit to:

**Valcom, Inc.**  
**Repair & Return Dept.**  
**5614 Hollins Road**  
**Roanoke, VA 24019-5056**

## VALCOM LIMITED WARRANTY

Valcom, Inc. warrants its products to be free from defects in materials and workmanship under conditions of normal use and service for a period of one year from the date of shipment. The obligation under this warranty shall be limited to the replacement, repair or refund of any such defective device within the warranty period, provided that:

1. inspection by Valcom, Inc. indicates the validity of the claim;
2. the defect is not the result of damage, misuse or negligence after the original shipment;
3. the product has not been altered in any way or repaired by others and that factory sealed units are unopened (a service charge plus parts and labor will be applied to units defaced or physically damaged);
4. freight charges for the return of products to Valcom are prepaid;
5. all units 'out of warranty' are subject to a service charge. The service charge will cover minor repairs (major repairs will be subject to additional charges for parts and labor).

**This warranty is in lieu of and excludes all other warranties, expressed or implied, and in no event shall Valcom, Inc. be liable for any anticipated profits, consequential damages, loss of time or other losses incurred by the buyer in connection with the purchase, operation or use of the product.**

This warranty specifically excludes damage incurred in shipment. In the event a product is received in damaged condition, the carrier should be notified immediately. Claims for such damage should be filed with the carrier involved in accordance with the F.O.B. point.

Headquarters  
 Valcom, Inc.  
 5614 Hollins Road  
 Roanoke, VA 24019-5056  
 Phone: (540) 563-2000  
 FAX: (540) 362-9800

In Canada:  
 CMX Corporation  
 35 Vank Kirk Drive #11 and 12  
 Brampton, Ontario L7A 1A5  
 Phone: (905) 456-1072  
 FAX: (905) 456-2269