www.class-connection.com

# VC-24
# TALKBACK INTERCOM SYSTEM
## EXPANDABLE 24/48/72/96 ZONE

## CONTENTS



**VC-24 with VC-24EXP Expansion Unit**

The VC-24 Talkback Intercom System provides 24 stations with one-way, two-way, group call and all call pages. Each station can be programmed for one-way or two-way communication. The stations may be grouped into one-way page groups. The system also provides the ability for a remote speaker location equipped with a call button to call the attendant location. The attendant receives calling speaker identification when using a Caller ID equipped telephone or a Caller ID display.

The VC-24 is compatible with standard 45 ohm speakers and one-way amplified speakers and can be accessed via a single line phone, E-Key line port or PABX loop start trunk port. An RS-232 port on the control unit provides a connection for a serial printer for printout of system activity.

The VC-24 provides a background music input and is designed to automatically mute music during a page. The basic system also provides four (4) contact closures associated with the last 4 zones to allow for door strike plate activation. Multiple VC-24 control units can be interconnected to allow global all call and global priority pages for up to six (6) VC-24 control units.

The VC-24 Control Unit provides access to 24 stations. A ***VC-24EXP Expansion Unit*** is available for the VC-24. Each VC-24EXP Expansion Unit will increase the capacity of the VC-24 by twenty-four (24) additional stations. Up to three (3) Expansion Units can be added to a system for a total of 48, 72, or 96 zones of paging.

***"WARNING: To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture."***

***"WARNING: Shock hazard – Do Not Open."***

***"AVIS: Risque de choc Electrique ne pas Ouvrir."***

***"PELIGRO: Corriente Electrica – No Abres."***

## *FEATURES*

- 24 zones of handsfree or one-way communication (expandable up to 96 zones)
- Built-in handsfree amplifier
- Background music input
- Built-in all call with "meet me" and "follow me" capability
- "Ring in" from speaker locations
- Calls placed in queue
- Dial tone programmable (On/Off)
- Alert tone
- Ringback tone
- Repeated alert/privacy tone programmable (On/Off)
- Auxiliary contact closures for zones 21, 22, 23, 24
- Programmable ring pattern
- Ring contact closure follows ring cycle
- Inhibit input
- Caller identification
- RS-232 serial printer port
- Control unit is internally powered (battery backup compatible; (1) VPB-260 per unit)
- Override port
- Emergency tone input
- Time tone input
- UNA contact closure input
- All call/priority page through up to six VC-24 systems of any size
- Group call
- Programmable class of service
- Time sync output
- Custom page groups
- Enhanced Caller ID
- Flexible Architectural numbering plan
- Interface to the PC Programming Tool
- Store user data to EEROM
- Real time clock for SMDR printer
- Auto detect for Com Port or Modem
- Auto adjust for Daylight Savings Time
- Evacuation tone to specified groups
- Time tones to specified groups
- Read software/firmware revision numbers

### *CAPACITY*

- The VC-24 is a single talkpath unit.
- The maximum number of speakers per zone: one 45 ohm speaker and/or forty (40) one-way amplified speakers.

## *NOMINAL SPECIFICATIONS*

These units **are not** intended for direct or indirect connection to the public telephone network. When used with a customer premise telephone system such as a key system or PABX system, these units are interfaced to the system via a fully protective paging port or a system central port, which are fully protected interface devices. Additionally, the host system must be configured to disallow a central exchange trunk conferencing in order to prevent indirect connection to the network.

### ***Attendant Port***

- Loop Start Access (E-Key C. O. Line Position, Single Line Phone, Trunk Port of PABX)
- DTMF Access
- Caller ID Compatible
- Tip and Ring Input Impedance: 600 Ω
- Tip and Ring Input Level: -10 dBm nominal

### ***Ring Supply***

90 Vac, 30 Hz - Ring Patterns:

| | |
|---|---|
| 2 sec ON, 4 sec OFF | American |
| 1 sec ON, 4 sec OFF | Dutch |
| Double Ring | British |

### ***Override Page Port***

- Loop Start Access (E-Key C. O. Line Position, Single Line Phone, Trunk Port of PABX)
- Telephone System Page Port Access

- Tip and Ring Input Impedance: 600 Ω
- Tip and Ring Input Level: -10 dBM nominal

***Background Music Amplifiers***

Input Impedance: 10 K Ω
Frequency Response: 50 Hz to 17 kHz +/- 3 dB
Distortion: < 1.0 %
Signal to Noise: -70 dB
Output Impedance: 45 Ω
Output Power: 1 watt per zone

***Page Amplifiers***

Frequency Response: 150 Hz to 7.5 kHz +/- 3 dB
Distortion: < 1.0 %
Signal to Noise: -70 dB
Output Impedance: 45 Ω
Output Power: 1 watt per zone

**POWER REQUIREMENTS**

Operating Voltage: 115, 230 Vac
Current: 1.0 Amp @ 115 Vac
0.5 Amp @ 230 Vac
Frequency: 50, 60 Hz

**ADDITIONAL INPUTS**

Inhibit (Ground Activated)
Emergency Tone Input
Input impedance: 10 K Ω
Input Level: -10 dBm
Time Tone Input
Input impedance: 10 K Ω
Input Level: -10 dBm

**PRINTER PORT**

Type: Serial
Baud Rate: 9600
8 Data Bits, No Parity, 1 Stop Bit

**ENVIRONMENT**

Temperature: 0 to 40 °C
Humidity: 0-85% Non-precipitating

**DIMENSIONS/WEIGHT**

- 17.50"H x 10.31"W x 3.06"D (44.45cm H x 26.19cm W x 7.77cm D)
- 15 lbs. (6.8 kg)

**MAIN UNIT CONTROLS**

- Tone level for internally generated tones (one control handles time, emergency and UNA tones)
- Tone level for externally generated tones (one control handles time and emergency tones)
- Phone to speaker level
- Speaker to phone level
- Background music system-wide level control
- All call level
- Priority page level

**AUXILIARY CONTACTS**

- Contact Closures are available on Zones 21, 22, 23, and 24 (strike plates) (Main Unit). Each contact operates when the respective zone number is dialed and the "*" key is pressed twice.
- Remote Signaling Closure (follows ring pattern) 250 mA max @ 24 Vdc.

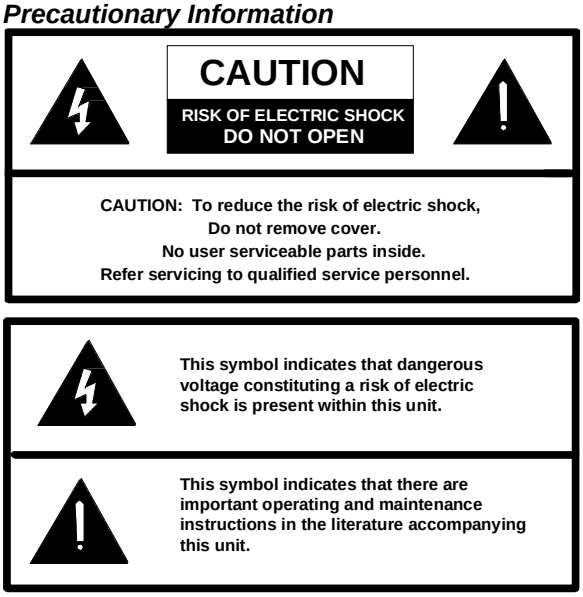
**PAGE PRIORITY**

It is possible for multiple inputs to request an audio connection to a speaker at the same time. When a conflict occurs, the highest priority audio will be connected. A lower priority input that is overridden will be re-connected if it is still active in the system when all higher priority inputs have ended. Priorities from highest to lowest:

Override Phone
Emergency Tone (continued…)
Time Tone
Inhibit
Handsfree Call
External All Call Page
All Call Page
Group Call Page
Night Ring
Background Music

# *INSTALLATION*

***Precautionary Information***




***FCC Notice***

This equipment has been tested and found to comply with the limits for Class A digital devices, pursuant to Part 15 of 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 is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

### *Mounting*

The VC-24 was designed for wall mounting only. Using the enclosed paper template, mark the locations for the mounting screws on a plywood backboard (minimum ½" thick). Insert screws and tighten to within 1/8" of the surface. Hang the unit on the screws, slide the unit left to the narrow end of the slots and tighten screws firmly.

### *Connections*

Mount (3) 66B type punchdown blocks on the backboard near the VC-24 control unit. Make connections to the punchdown blocks as specified in Figure 2 - Punchdown Block Connections. (System Inputs - Block P7, Speaker Outputs - Block P3, Switch Inputs - Block P6). Also refer to the following diagrams for connections of each application.

### *Setting Option Switches*

After all connections have been made, set the option switches to fit the specific user requirements. Refer to Figure 1 for location and Table 1 for the default values of the various switches. Make changes as required.

***NOTE: This unit provides an option for disabling Talkback Alert Tone and Repeating Privacy Tones. Check local privacy regulations prior to disabling these tones.***

### *Power Connections*

Use a cord set consisting of a minimum 18 AWG cord and grounding type attachment plug rated a minimum of 15A, 250V. The cord set should have the appropriate safety approvals for the country in which the equipment will be installed and marked HAR.

The VC-24 may be provided with one of the following:

- NEMA 5-15 cordset for North American use
- CEE/7 cordset for Continental European use
- BS1363 cordset for United Kingdom use

Connect cordset to unit via IEC 320 female connector located on one end of cordset to IEC 320 male appliance coupler located on VC-24.

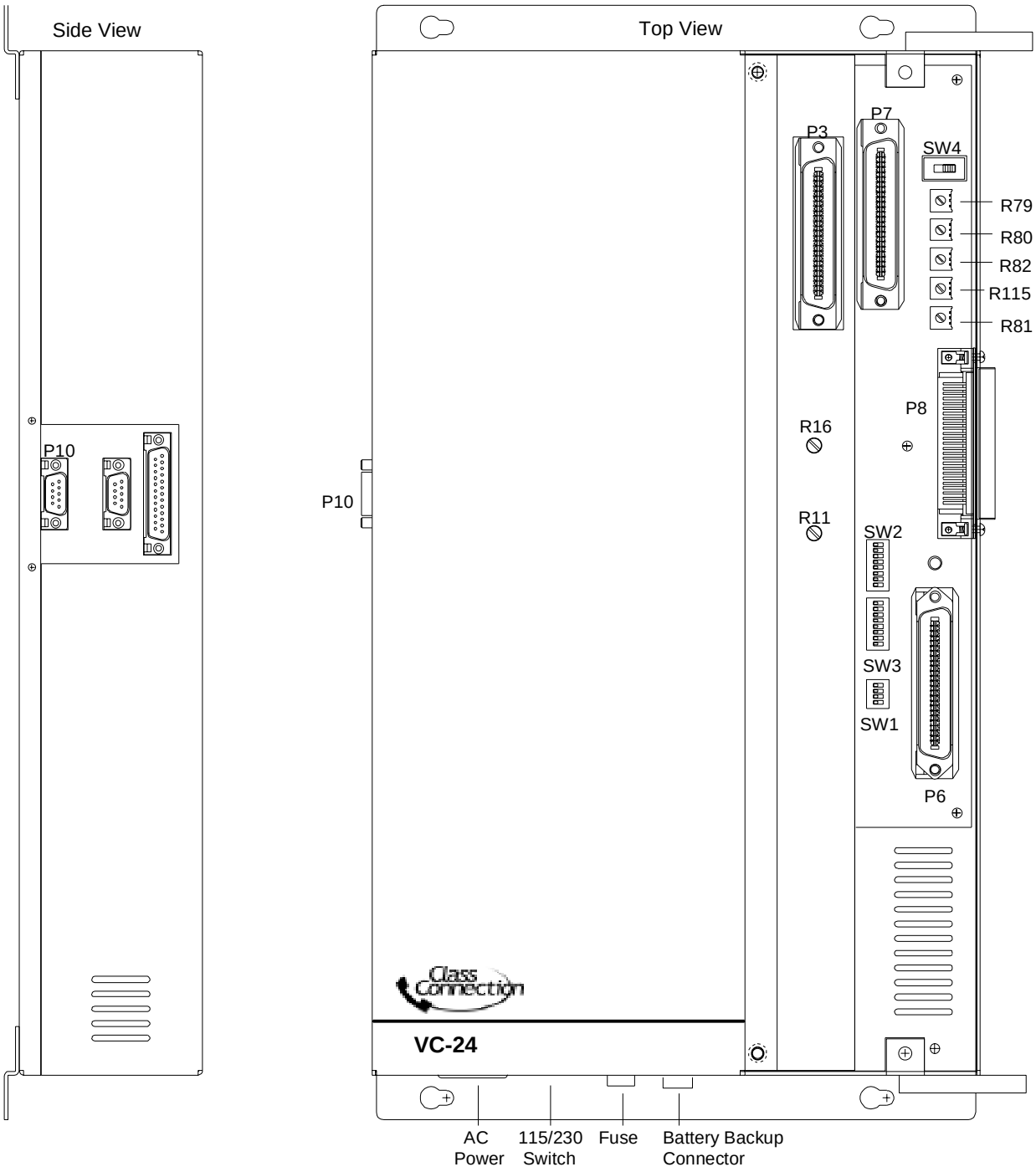
- **For 115 VAC use**, verify fuse rating of 1 amp and voltage selector switch displays 115 V.
- **For 230 VAC use**, verify fuse rating of .5 amp and voltage selector switch display 230 V.
- After all required connections have been made, plug the cordset into appropriate AC wall outlet.

**For United Kingdom use:**

As the colors of the cores in the main lead may not correspond with the colored markings identifying the terminals in your plug, proceed as follows:

- The core which is colored green and yellow must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol (inverted Christmas tree), or colored green and yellow.
- The core which is colored blue must be connected to the terminal which is marked with the letter N or colored black.
- The core which is colored brown must be connected to the terminal which is marked with the letter L or colored red.

## FIGURE 1 - VC-24 CONTROL AND CONNECTOR LOCATIONS




Switches:

| | |
|---|---|
| SW1 | - NOT USED |
| SW2, SW3 | - NOT USED |
| SW4 | - Battery Feed Switch (Priority Port) |

Connectors:

| | |
|---|---|
| P3 | - 45 ohm Speakers (See Figure 2) |
| P6 | - Call-In Switch Inputs (See Figure 2) |
| P7 | - System Connections (See Figure 2) |
| P8 | - Expansion Unit Connector |
| P10 | - RS232 Serial Port for SMDR (DB9 Connector) |

Volume Controls:

| | |
|---|---|
| R11 | - Handsfree Speaker to Phone Level |
| R16 | - Handsfree Phone to Speaker Level |
| R79 | - Background Music Level |
| R80 | - External Tone Source Level |
| R81 | - All Call Adjust Volume/Attendant Level |
| R82 | - Override Port Page Level |
| R115 | - Internal Tone Source Level |

# FIGURE 2 - PUNCHDOWN BLOCK CONNECTIONS

**Block P3 - Speaker Outputs**

| | | |
|---|---|---|
| 26 | W/BL | T STA 1 |
| 1 | BL/W | R STA 1 |
| 27 | W/O | T STA 2 |
| 2 | O/W | R STA 2 |
| 28 | W/GR | T STA 3 |
| 3 | GR/W | R STA 3 |
| 29 | W/BR | T STA 4 |
| 4 | BR/W | R STA 4 |
| 30 | W/S | T STA 5 |
| 5 | S/W | R STA 5 |
| 31 | R/BL | T STA 6 |
| 6 | BL/R | R STA 6 |
| 32 | R/O | T STA 7 |
| 7 | O/R | R STA 7 |
| 33 | R/G | T STA 8 |
| 8 | G/R | R STA 8 |
| 34 | R/BR | T STA 9 |
| 9 | BR/R | R STA 9 |
| 35 | R/S | T STA 10 |
| 10 | S/R | R STA 10 |
| 36 | BK/BL | T STA 11 |
| 11 | BL/BK | R STA 11 |
| 37 | BK/O | T STA 12 |
| 12 | O/BK | R STA 12 |
| 38 | BK/G | T STA 13 |
| 13 | G/BK | R STA 13 |
| 39 | BK/BR | T STA 14 |
| 14 | BR/BK | R STA 14 |
| 40 | BK/S | T STA 15 |
| 15 | S/BK | R STA 15 |
| 41 | Y/BL | T STA 16 |
| 16 | BL/Y | R STA 16 |
| 42 | Y/O | T STA 17 |
| 17 | O/Y | R STA 17 |
| 43 | Y/G | T STA 18 |
| 18 | G/Y | R STA 18 |
| 44 | Y/BR | T STA 19 |
| 19 | BR/Y | R STA 19 |
| 45 | Y/S | T STA 20 |
| 20 | S/Y | R STA 20 |
| 46 | V/BL | T STA 21 |
| 21 | BL/V | R STA 21 |
| 47 | V/O | T STA 22 |
| 22 | O/V | R STA 22 |
| 48 | V/G | T STA 23 |
| 23 | G/V | R STA 23 |
| 49 | V/BR | T STA 24 |
| 24 | BR/V | R STA 24 |
| 50 | V/S | N. C. |
| 25 | S/V | N. C. |

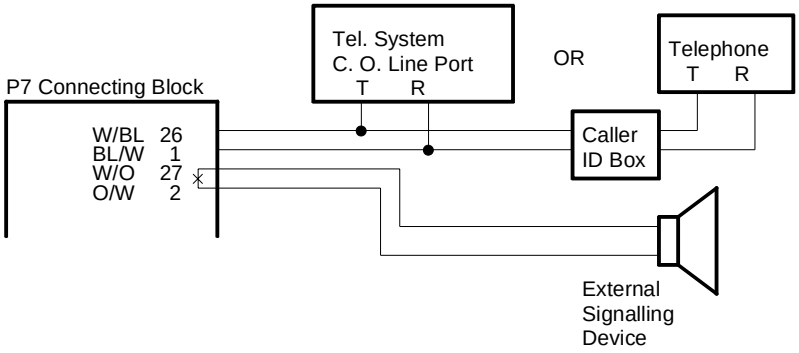
**Block P6 - Switch Inputs**

| | | |
|---|---|---|
| 26 | W/BL | INA1 |
| 1 | BL/W | INB1 |
| 27 | W/O | INA2 |
| 2 | O/W | INB2 |
| 28 | W/GR | INA3 |
| 3 | GR/W | INB3 |
| 29 | W/BR | INA4 |
| 4 | BR/W | INB4 |
| 30 | W/S | INA5 |
| 5 | S/W | INB5 |
| 31 | R/BL | INA6 |
| 6 | BL/R | INB6 |
| 32 | R/O | INA7 |
| 7 | O/R | INB7 |
| 33 | R/G | INA8 |
| 8 | G/R | INB8 |
| 34 | R/BR | INA9 |
| 9 | BR/R | INB9 |
| 35 | R/S | INA10 |
| 10 | S/R | INB10 |
| 36 | BK/BL | INA11 |
| 11 | BL/BK | INB11 |
| 37 | BK/O | INA12 |
| 12 | O/BK | INB12 |
| 38 | BK/G | INA13 |
| 13 | G/BK | INB13 |
| 39 | BK/BR | INA14 |
| 14 | BR/BK | INB14 |
| 40 | BK/S | INA15 |
| 15 | S/BK | INB15 |
| 41 | Y/BL | INA16 |
| 16 | BL/Y | INB16 |
| 42 | Y/O | INA17 |
| 17 | O/Y | INB17 |
| 43 | Y/G | INA18 |
| 18 | G/Y | INB18 |
| 44 | Y/BR | INA19 |
| 19 | BR/Y | INB19 |
| 45 | Y/S | INA20 |
| 20 | S/Y | INB20 |
| 46 | V/BL | INA21 |
| 21 | BL/V | INB21 |
| 47 | V/O | INA22 |
| 22 | O/V | INB22 |
| 48 | V/G | INA23 |
| 23 | G/V | INB23 |
| 49 | V/BR | INA24 |
| 24 | BR/V | INB24 |
| 50 | V/S | N. C. |
| 25 | S/V | N. C. |

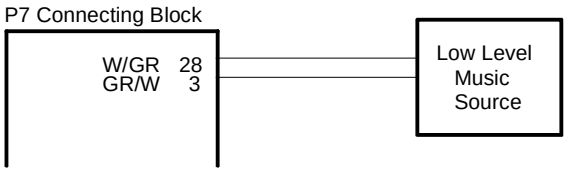
**Block P7 - System Inputs**

| | | | |
|---|---|---|---|
| 26 | W/BL | Tip - Attendant Tel | Group 1 |
| 1 | BL/W | Ring - Attendant Tel | |
| 27 | W/O | Common Audible C.C. | |
| 2 | O/W | Common Audible C.C. | |
| 28 | W/GR | BGM Input | |
| 3 | GR/W | BGM Input | |
| 29 | W/BR | Riot Mode | |
| 4 | BR/W | Riot Mode | |
| 30 | W/S | External Tone - Tip | |
| 5 | S/W | External Tone - Ring | |
| 31 | R/BL | Clock Activate | |
| 6 | BL/R | Clock Activate | |
| 32 | R/O | Clock Enable C. C. | Group 2 |
| 7 | O/R | Clock Enable C. C. | |
| 33 | R/G | Emergency Activate | |
| 8 | G/R | Emergency Activate | |
| 34 | R/BR | Emergency Enable C. C. | |
| 9 | BR/R | Emergency Enable C. C. | |
| 35 | R/S | Override Page Port - Tip | |
| 10 | S/R | Override Page Port - Ring | |
| 36 | BK/BL | Dry Priority Activate | |
| 11 | BL/BK | Dry Priority Activate | |
| 37 | BK/O | Inhibit | |
| 12 | O/BK | Inhibit | |
| 38 | BK/G | Schedule Contact Closure 1 | Group 3 |
| 13 | G/BK | Schedule Contact Closure 1 | |
| 39 | BK/BR | Schedule Contact Closure 2 | |
| 14 | BR/BK | Schedule Contact Closure 2 | |
| 40 | BK/S | Schedule Contact Closure 3 | |
| 15 | S/BK | Schedule Contact Closure 3 | |
| 41 | Y/BL | Schedule Contact Closure 4 | |
| 16 | BL/Y | Schedule Contact Closure 4 | |
| 42 | Y/O | Global Priority Activate | |
| 17 | O/Y | Global Priority Activate | |
| 43 | Y/G | Global All Call Activate | |
| 18 | G/Y | Global All Call Activate | |
| 44 | Y/BR | Global Page Tip | Group 4 |
| 19 | BR/Y | Global Page Ring | |
| 45 | Y/S | Clock Sync | |
| 20 | S/Y | Clock Sync | |
| 46 | V/BL | Night Ring Activate | |
| 21 | BL/V | Night Ring Activate | |
| 47 | V/O | Sta. 21 C. C. | |
| 22 | O/V | Sta. 21 C. C. | |
| 48 | V/G | Sta. 22 C. C. | |
| 23 | G/V | Sta. 22 C. C. | |
| 49 | V/BR | Sta. 23 C. C. | |
| 24 | BR/V | Sta. 23 C. C. | |
| 50 | V/S | Sta. 24 C. C. | |
| 25 | S/V | Sta. 24 C. C. | |

## ATTENDANT PORT CONNECTION

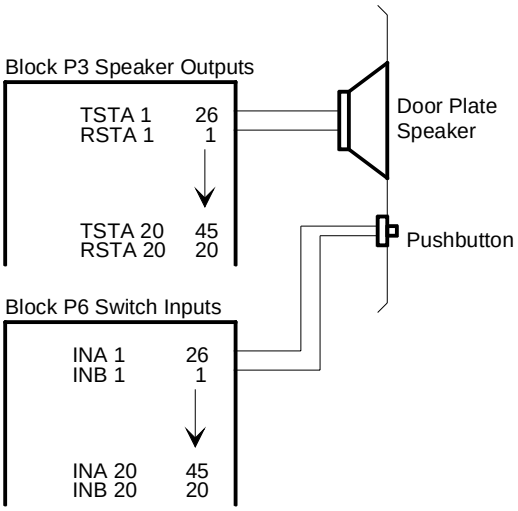



## BACKGROUND MUSIC CONNECTION

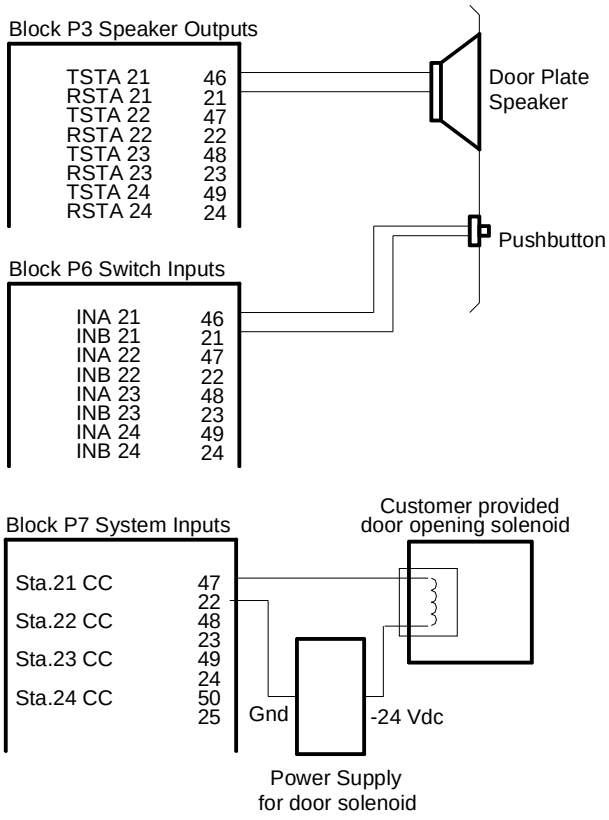



## DOOR SPEAKER AND CALL SWITCH CONNECTION

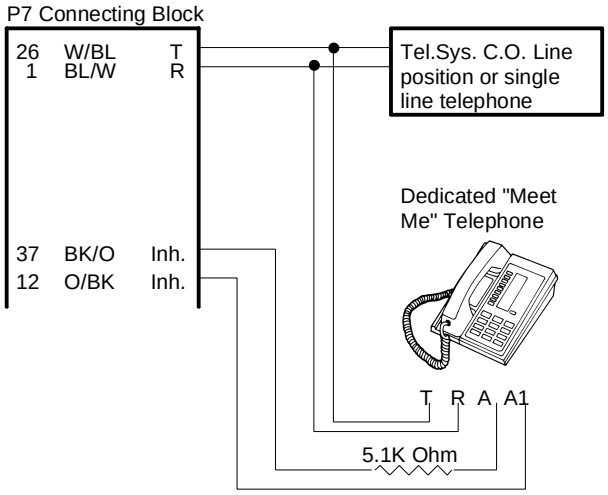
### (STATIONS 1-20)



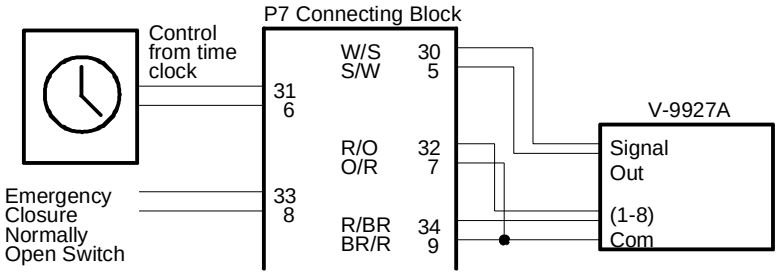

### (STATIONS 21-24)



## INHIBIT OPTION

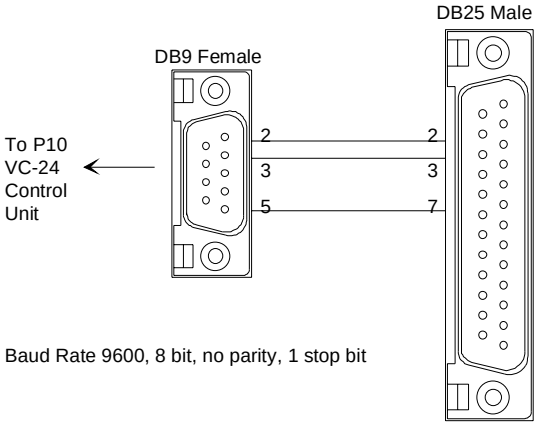



## EXTERNAL TONE SOURCE USING A V-9927A



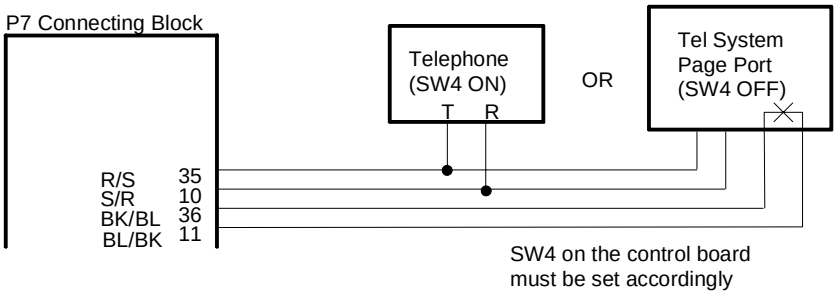

*NOTE: External tone source requires programming option to enable feature. See Table 1(SW3-8)

## SMDR PRINTER PORT CABLE

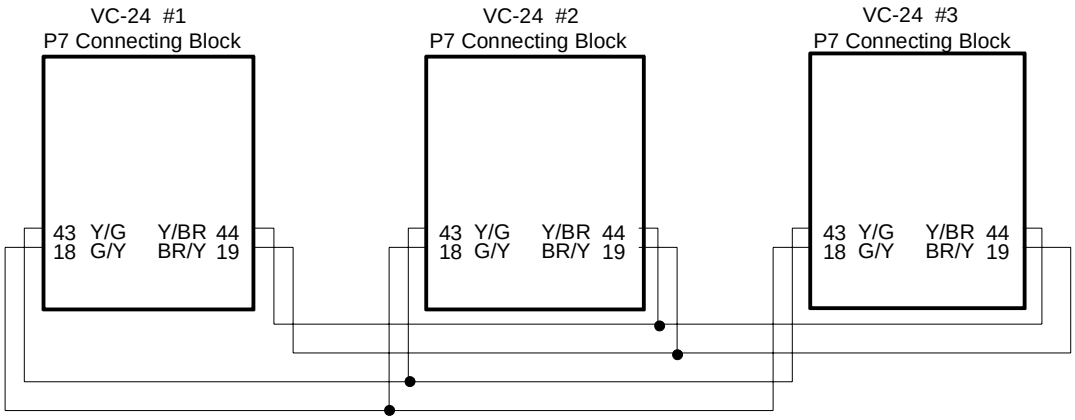



Baud Rate 9600, 8 bit, no parity, 1 stop bit

## OVERRIDE PAGE PORT

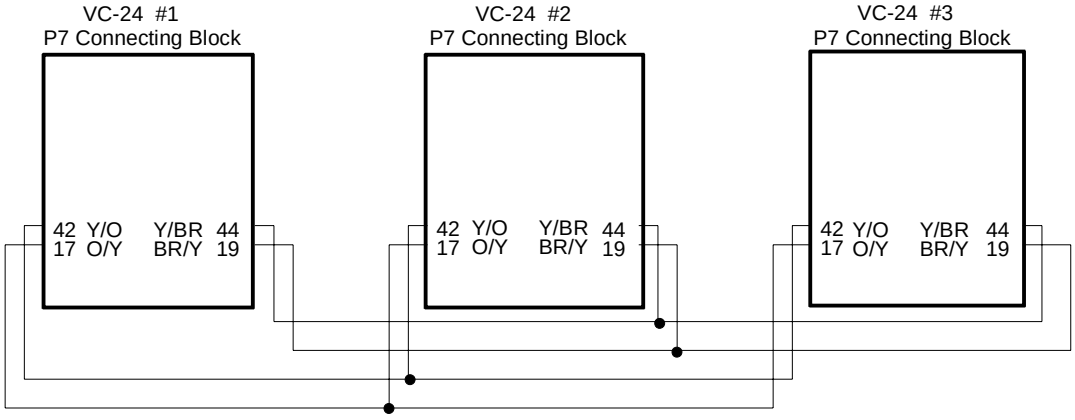



## GLOBAL ALL CALL PAGE (FROM ATTENDANT DIAL UP)



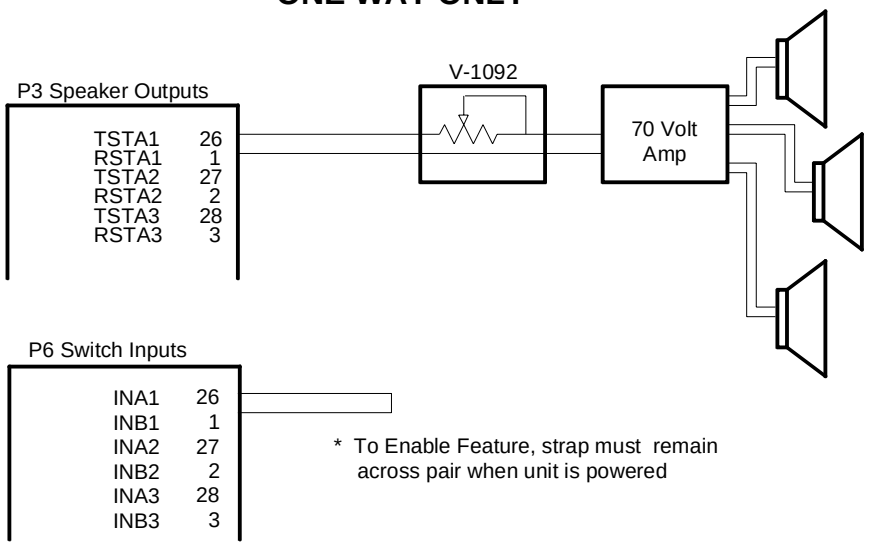

NOTE: Global all call page requires programming option to enable feature.

## GLOBAL PRIORITY PAGE (FROM OVERRIDE PAGE PORT)

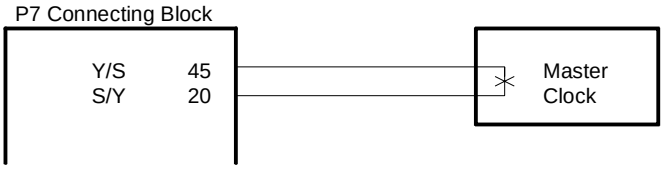



NOTE: Global all call page requires programming option to enable feature.

## ZONE PAGE OPTION
## ONE WAY ONLY




## CLOCK SYNC INPUT




Master Clock must make contact closure at 0200 Hours.

### Dipswitch Options - Basic System

Note SW1, SW2 and SW3 are not used in the VC-24 System.

### Override Port Options

| | Switch OFF | Switch ON |
|---|---|---|
| | | |
| **Main Board SW4** | Tel. System Page Port Access | Loop Start Trunk Port |

## *INSTALLATION OF THE PROGRAMMING TOOL*

The VC-24 Programming Tool is a windows based software tool designed to interface with the VC-24.

***Minimum Computer Requirements for the Class Connection™ VC-24 Programming Tool***:
Hardware:

- 80486 (higher is recommended)
- Hard drive with 30 Mbytes free
- Mouse
- 8 Mbytes of RAM (more is recommended)
- 1 available serial communication port

Operating System:

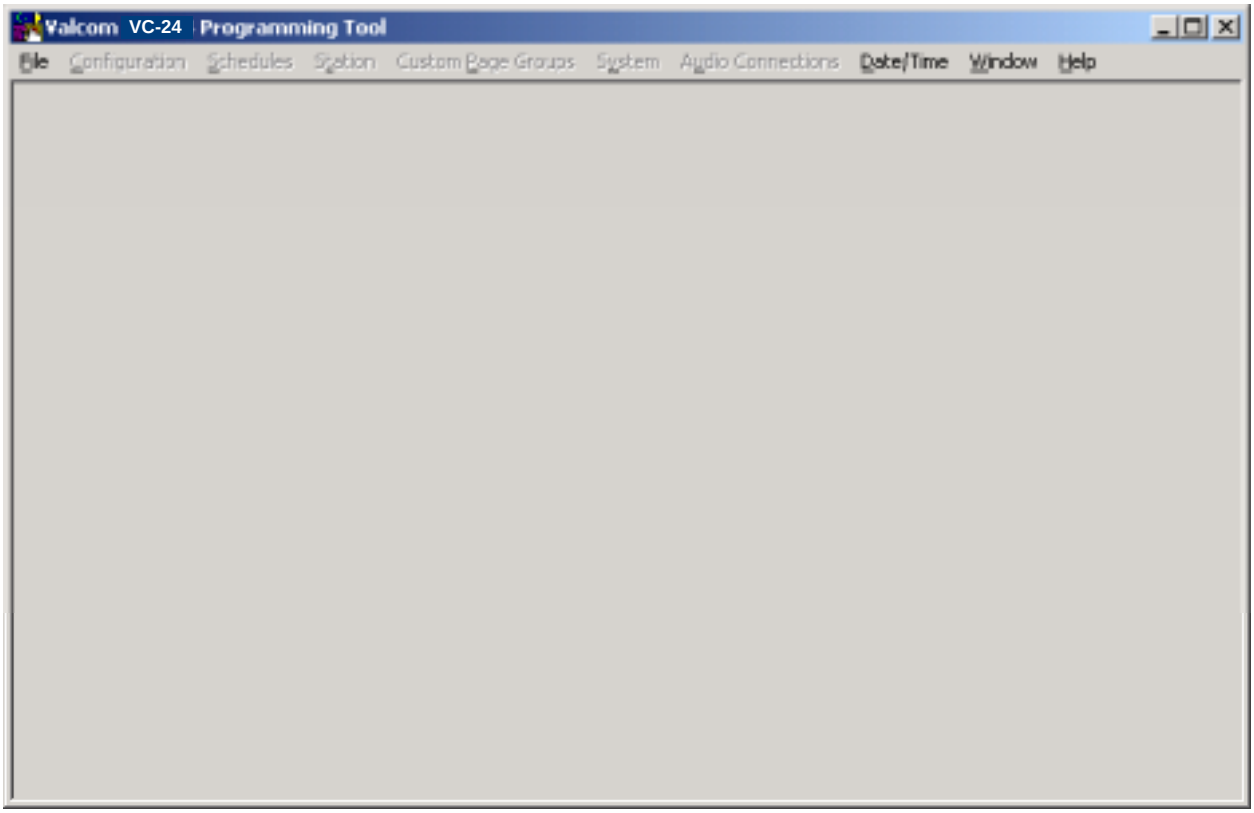
- The Programming Tool is 32-bit and requires Windows 95, Windows 98, or Windows NT 4.0.

The programming tool software is furnished on 1.4 MB disks and must be installed to the hard drive. To install the software:

- On the taskbar, click the **Start** button
- Insert disk 1
- Select **Run**
- Type **a:\Setup** (Assuming a: is the disk drive being used)
- Follow on-screen instructions for full installation, changing disks as the prompt requests
- The Class Connection™ VC-24 Programming Tool will automatically appear in the Programs list

## *USING THE PROGRAMMING TOOL*

- On the taskbar, click the Start button, point to Programs, and select Class Connection™ ***VC-24 Programming Tool***.
- The VC-24 Programming Tool splash screen appears momentarily and then the Programming screen comes into view



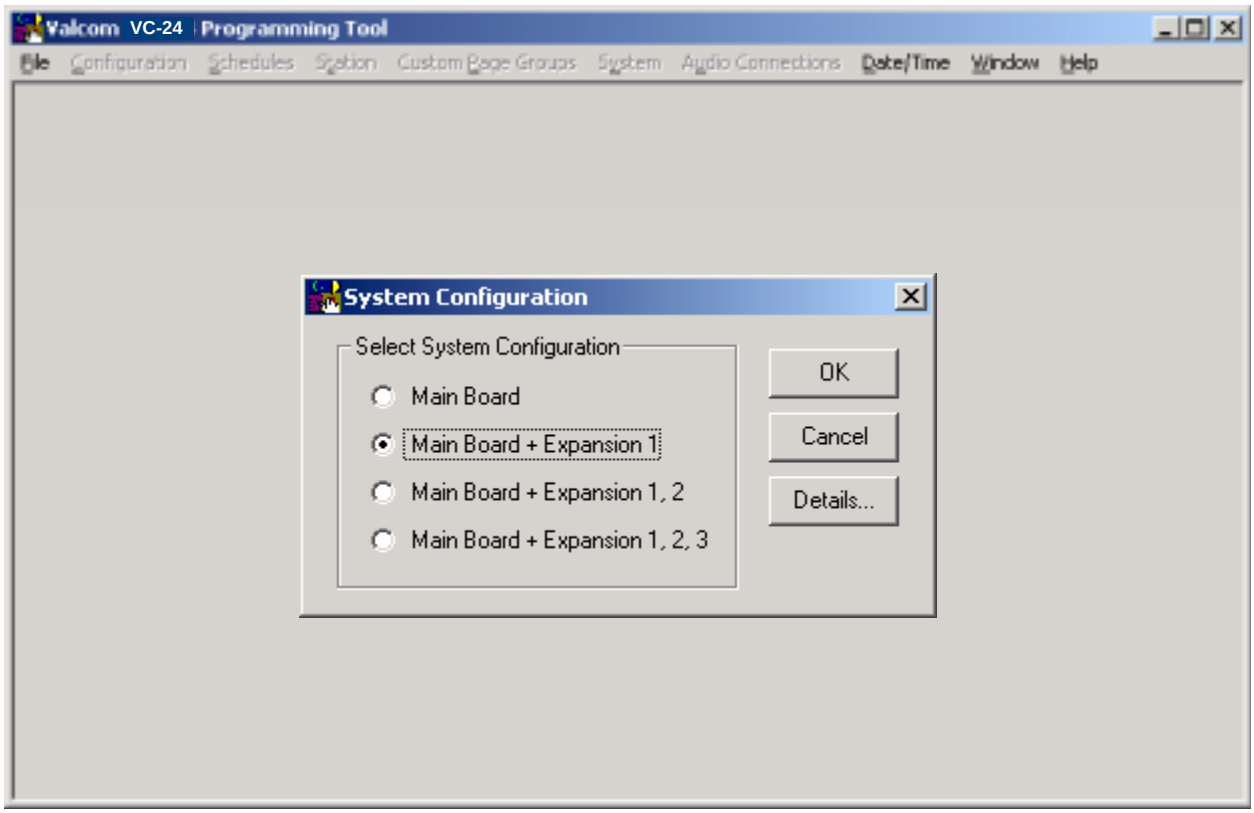

### *System Configuration*

To begin the programming process, click on **File**. A pull-down menu appears allowing selection of a previously programmed file (click on **Open**) or the ability to create a new file (click on **New**). The following instructions assume a **New** configuration file is being created. Click on **New** from the pull-down menu. A System Configuration screen is displayed to allow selection of the installed components within the system.

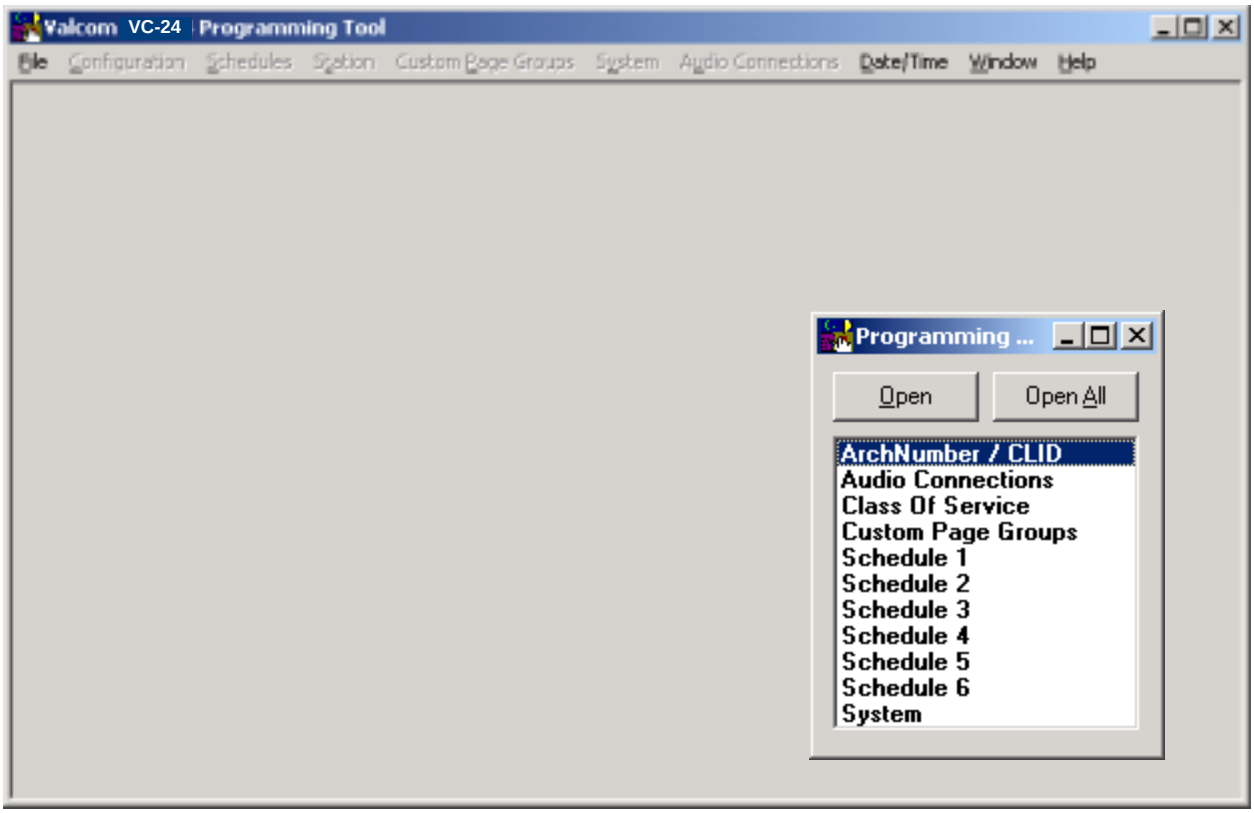
Select one of the following from the list:

- For a 24-station system select **Main Board**.
- For a 48 station system select **Main Board + Expansion 1.**
- For a 72 station system select **Main Board + Expansion 1, 2.**
- For a 96 station system select **Main Board + Expansion 1, 2, 3.**

Press **OK** to accept the present selection or **Cancel** to re-select. When selection is complete, the Programming Window Screen will be displayed. (To display the configuration of the system press the **Details** button).




When **OK** is selected from the System Configuration screen, the Programming Window appears - see below. The Programming Window allows each option to be accessed by selecting the option and pressing **Open** or by double clicking on the selected option. All functions can be listed at once by pressing **Open All**. (All of the options accessed through the Programming Window can also be accessed from the pulldown menus).




## Architectural Number and CLID (Caller ID) Programming

The first function to configure is the **Architectural Number and CLID Programming**.

The **Architectural Numb**er is a 1 to 4 digit number that is dialed by the phone to connect to a specific speaker. Flexible architectural numbering is often selected to allow speakers and room numbers to match. The **CLID Programming** allows a name or up to 15 characters description to be entered for each station.

The information entered in the CLID description field will be displayed on the phone or Caller ID unit if provided as part of the system.

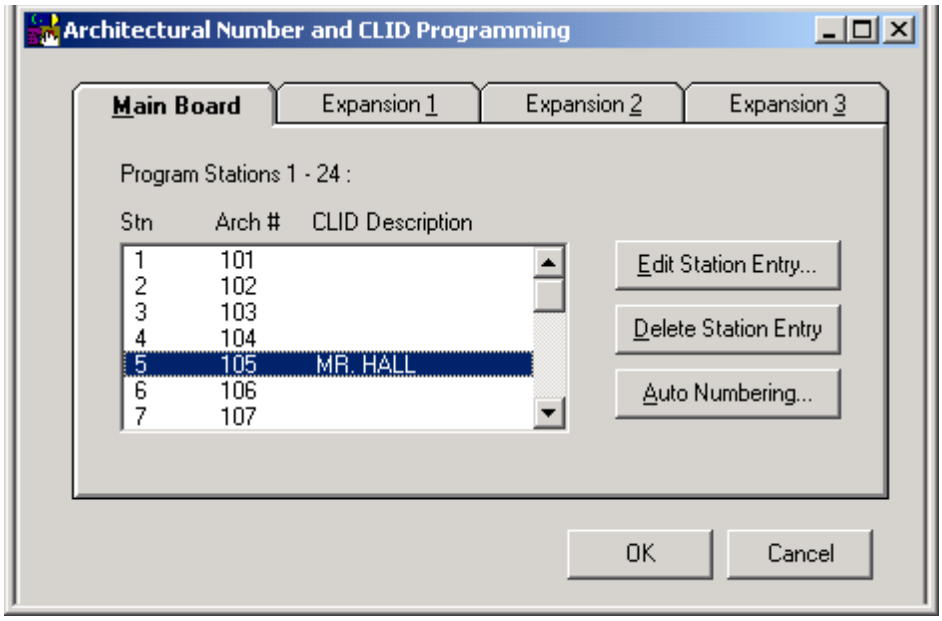
The **Edit Station Entry** allows a CLID description to be entered for each station. Example: ***105*** would be the Arch # and ***MR. HALL*** would be the CLID description (15 character limit).

The **Delete Station Entry** allows removal of selected architectural and CLID descriptions.

**Auto Numbering** assigns the Arch # in sequential order. The beginning number is the currently selected station; an ending number must be specified.

To Auto Number – Highlight station where architectural numbering begins.

Select **Edit Station Entry**. Enter beginning architectural number and select OK.
Select **Auto Numbering** and enter last architectural number (must be a higher number).
Select **OK**.




Enter information for the Main Board as well as each Expansion Unit being used and press **OK** to accept.

### *Audio Connections*

This screen allows selection of groups to receive Background Music, Time Tones and Emergency Tones. This sample system consists of a "Main Board + Expansion 1" so eight groups are available to receive audio connections. (Each group contains six stations).

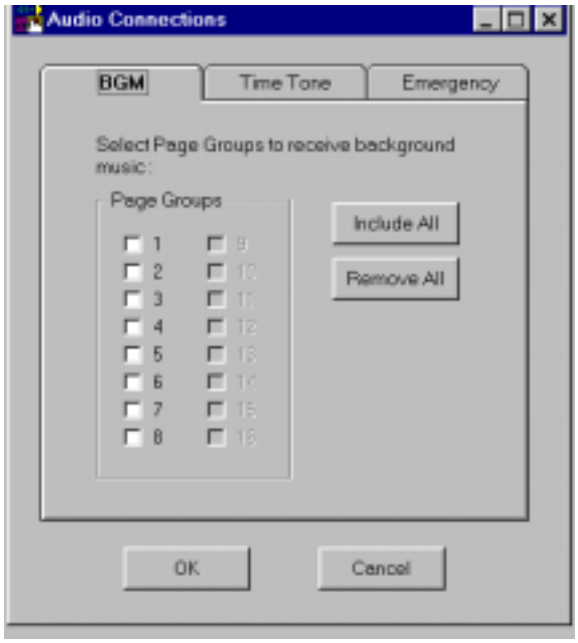
| | | |
|---|---|---|
| Group 1 | Stations 1, 2, 3, 4, 5, 6 | Main Board |
| Group 2 | Stations 7, 8, 9, 10, 11, 12 | Main Board |
| Group 3 | Stations 13, 14, 15, 16, 17, 18 | Main Board |
| Group 4 | Stations 19, 20, 21, 22, 23, 24 | Main Board |
| Group 5 | Stations 25, 26, 27, 28, 29, 30 | Expansion 1 |
| Group 6 | Stations 31, 32, 33, 34, 35, 36 | Expansion 1 |
| Group 7 | Stations 37, 38, 39, 40, 41, 42 | Expansion 1 |
| Group 8 | Stations 43, 44, 45, 46, 47, 48 | Expansion 1 |

Click on the tab of the desired feature to program zones. Click on each group button to receive the audio connection. If all groups are to receive an audio connection for the specific feature, select **Include All.**

The zones for each feature:
BGM, Time Tone and Emergency, are selected in the same manner.

***Defaults:*** ***BGM*** ***- All Off***
***Time Tone*** ***- All On***
***Emergency*** ***- All On***

After zones for each feature have been selected, press the **OK** button.




The Audio Connections screen disappears, with the Programming Window still being active to allow selection of other options.

### *Class of Service.*

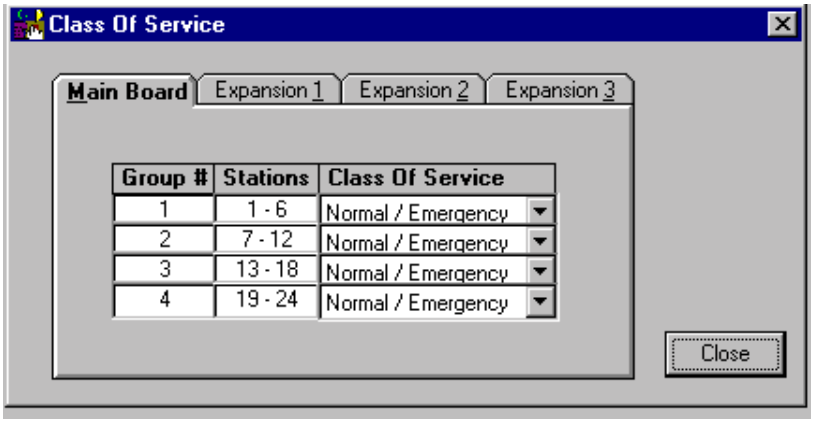
Class of Service defines how a call originated by a button press will be queued for answer by the attendant.

- **Emergency Only** - Top priority. Stations programmed as Emergency Only are moved to the top of the priority list to be answered first.
- **Normal/Emergency** - Calls from stations programmed as Normal/Emergency are received in the queue as they are made. 1 button press from the station, the call is received as a normal call; 4 button presses from the station, the call is received as an emergency call.
- **Normal Only** - Calls from stations programmed as Normal Only are received in the queue as Normal priority whether 1 or 4 button presses are made at the calling station.

Set the Class of Service for all Groups on the Main Board as well as any Expansion Boards. Press the down arrow at the end of the Class of Service field to display the available types of service for selection.

When finished, press the **Close** button.

***Default option of all stations, with or without the Option Board installed, is <u>Normal/Emergency</u>.***




### *Custom Page Groups*

When **Custom Page Groups** is selected, the following screen is displayed.

There are 4 Custom Page Groups available.

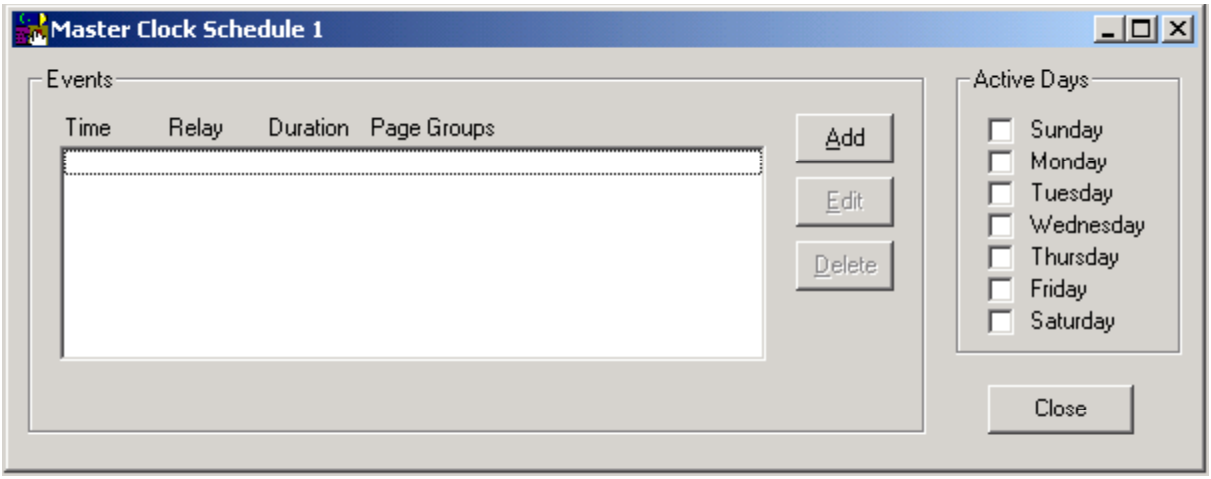
Select the Page Groups to receive custom paging by clicking on the desired box. Each Custom Page Group can contain all groups or a combination of groups. (Example: Custom Page Group 50 could contain page groups 1, 2, and 3 and Custom Page Group 52 could contain page groups 1, 2, 7, and 8).

Select OK after all desired page groups are defined.

### *Master Clock Schedule*

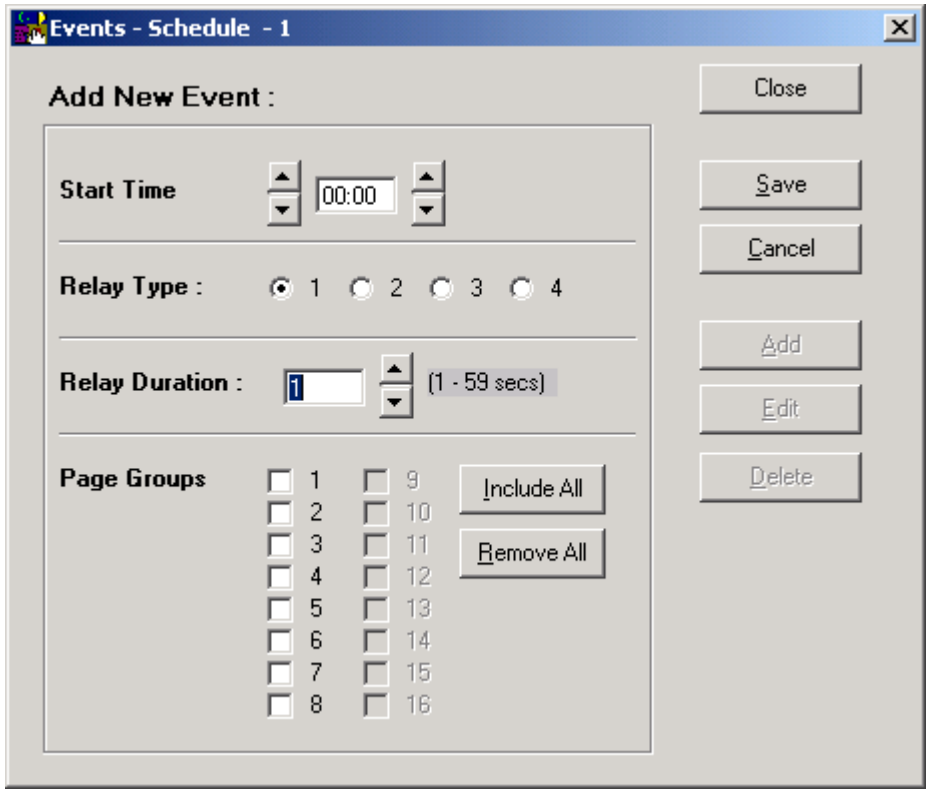
The Master Clock Schedule has 6 separate schedules with up to 256 total events. The user defines how these events are to be distributed between schedules.
Dial codes may be used to force a schedule or to turn a schedule off. #94X forces schedule on with the X being the number of the schedule (i.e. #941 will force Schedule 1). #940 turns off the active schedule.

- Select Schedule 1-6.
- Click Open.
- Displays Schedule 1 menu.
- Choose which days schedule is to be active.
- Select Add.




New Event Screen menu will be shown. Select Start Time. Select which Relay Type you want to follow the Schedule, and Select the Relay Duration of the contact closure. Select which Page Group(s) tone should go to. Select Save.

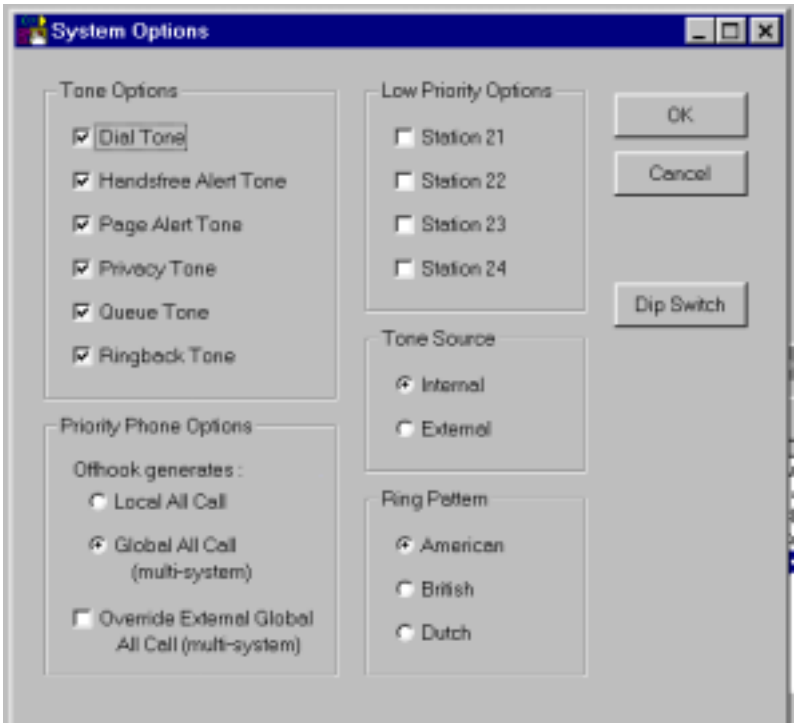
**NOTE:** The contact closure pairs 13, 14, 15, 16 on the system punchdown block, should be wired to the tone select input of an external tone generator (V-9927A). The tone output of the external tone generator should then be wired to the external tone input of the VC-24, pair 5 of the system punchdown block.



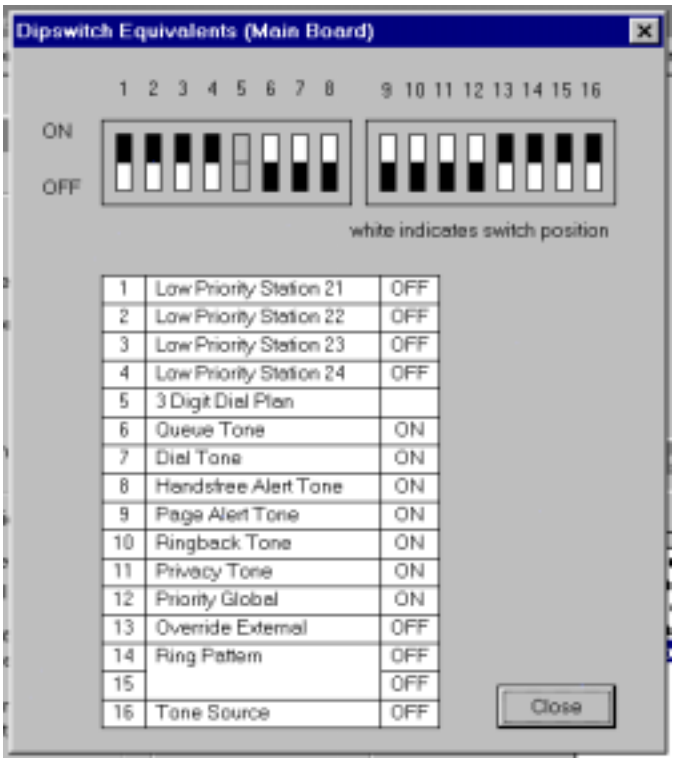

### *System*

Next select **System** from the Programming Window. A check in the box means ON (selected); an empty box means OFF (not selected). Select the desired options and click on **OK** to exit this screen. The options are described in more detail in the Control Unit (VC-24) document or select **Help** from the pull-down menu for on-screen details.

The **Dip Switch** button displays the dip switch equivalent (see next page) of the options selected with the programming tool. ***Note that SW2 and SW3 are not used with the VC-24 System.***

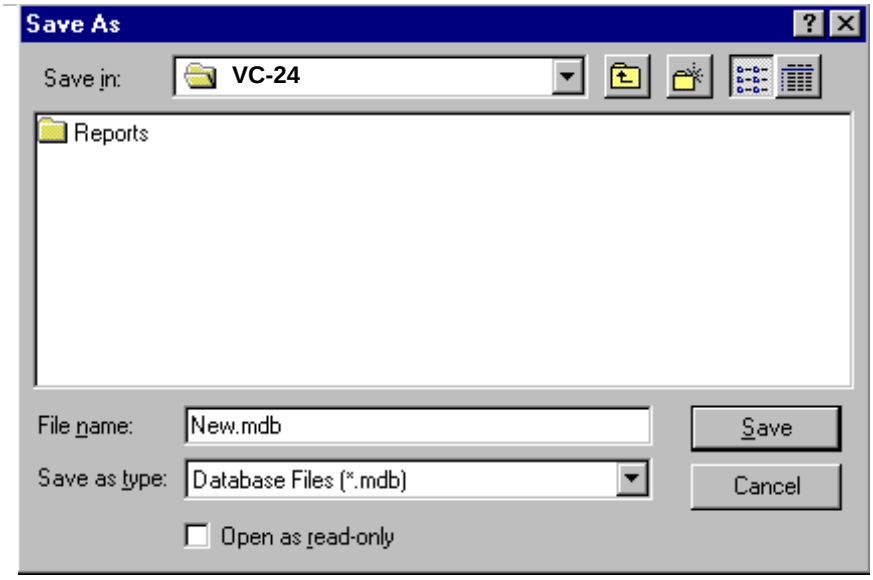



Dip switch equivalent of programmed options.



### *Save Programmed Data to a File*

When the programming selections are complete, click on the **File** menu option to access the pull-down menu and select **Save**. Define fine name and location and press **Save**.




## *COMMUNICATING WITH THE VC-24*

Communicating with the VC-24 allows sending and receiving of user programmed data, Setting of System Date and Time, and reading the revision numbers of the system firmware.

Once system programming is complete, this data must be downloaded to the VC-24 System. This communication can be accomplished through two methods:

### *Initiating Communications*

**Direct Connect** (PC is on site with the VC-24 System - can be accessed via RS232 cable).
To Connect:
Connect cable from the VC-24 to the PC being used.
Set up Com Port (see Set Up Com Port Section).
Connection complete.

**Modem Connect** (PC is off site or can only be accessed using phone lines to communicate).
To Connect:
Set up modem (See VCMDM user manual).
Set up Com Port (See Set Up Com Port Section).
Select Dialing Method

- Modem Connect
- Manual Connect

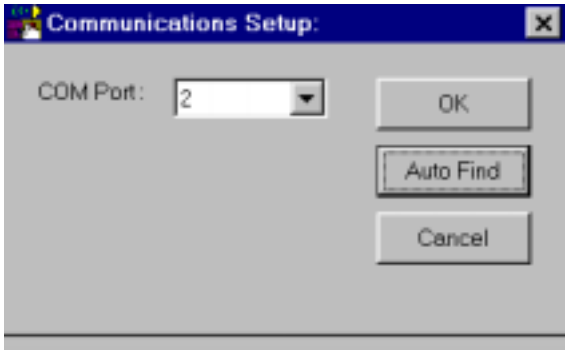
***REMINDER:***
***For a modem to communicate with the VC-24, there must be a remote modem connected to the VC-24. Refer to the VCMDM manual for details.***

### *Direct Connect - Set Up Com Port*

Select **File**, **Com Setup**, **Com Port Selection**.

If the port is known, use the down arrow to locate the number, select it and press OK.
If the port is not known, select **Auto Find**.

***Reminder:***
***If direct connect is being used, make sure cables are connected and VC-24 is on.***
***If modem connect is being used, make sure modem is installed and working properly.***

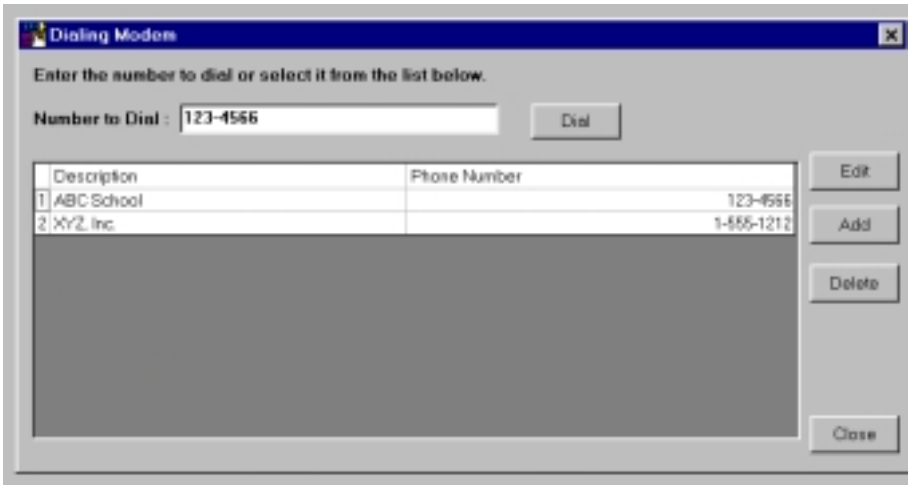



### *Modem Connect*

From the Programming Tool, select **File**, **Modem**, and then **Modem Connect**.

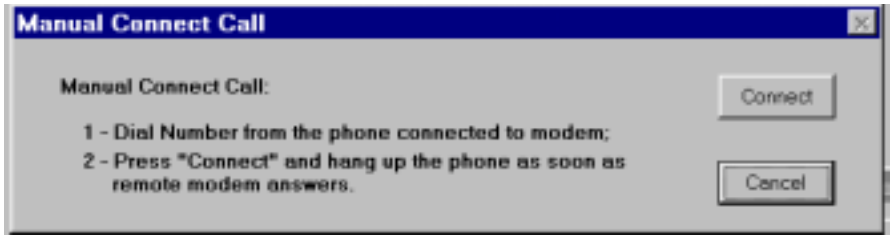
The screen below appears. Enter the number to dial or select a phone number from the list displayed. Numbers can be added, edited, or deleted from the list. Up to 10 numbers can be stored.
Once the desired phone number is displayed in the **Number to Dial** field, click on the **Dial** button. Messages should be displayed stating, **"Initializing", "Dialing"**, and **"Modem Connection Successful".** Click on OK.

If modem fails to connect, verify modem was set up properly during system installation. Refer to the VCMDM manual.



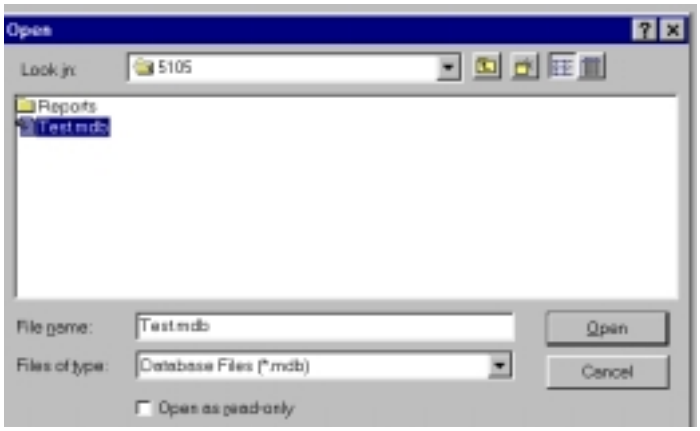
### *Manual Connect*

From the Programming Tool, select **File**, **Modem**, and **Manual Connect**. Follow the instructions as described on the screen. Messages should be displayed stating, **"Initializing","Dialing"**, and **"Modem Connection Successful"**. Click on **OK.**




### *Send data to VC-24*

From the main menu, select **Send Data to VC-24.** If a file is open, that file will be sent to the VC-24 System. If no file is open when **Send Data to VC-24** is selected, the screen appears to allow selection of the data file to be opened and downloaded to the VC-24. **Highlight** the desired file and click on **OK**.

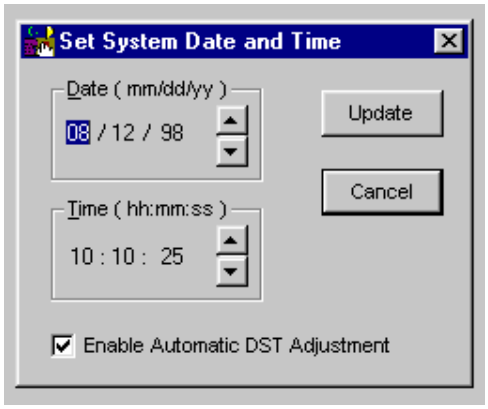



### *Receive Data from VC-24*

From the main menu, select **Receive Data from VC-24.** This will take place automatically. If you are not allowed to select **Receive Data from VC-24**, close the currently open file and try again. Messages will be displayed stating **Receiving Data**, **Receive Data Completed Successfully**. Click on **OK.**

## *Set System Date and Time*

Set System Date/Time by clicking on the **Date/Time** pull-down menu. Up/Down arrows are used to move date and time to the desired setting. Press **Update** to set the new Date/Time or **Cancel** to leave unchanged. The **Automatic DST Adjustment** can be enabled or disabled here.




## *Read Software and Firmware Revision Numbers*

This feature is accessed through the Help menu. Select **Help**, then **About**. This option provides information for all processors.

***Reminder: The PC must be connected to the system to access this information.***


## *Ending Communications*

**Direct Connect:** No action required, just unplug cable.

**Modem Connect**: From the pulldown menu, select **File, Modem, Modem Release**.

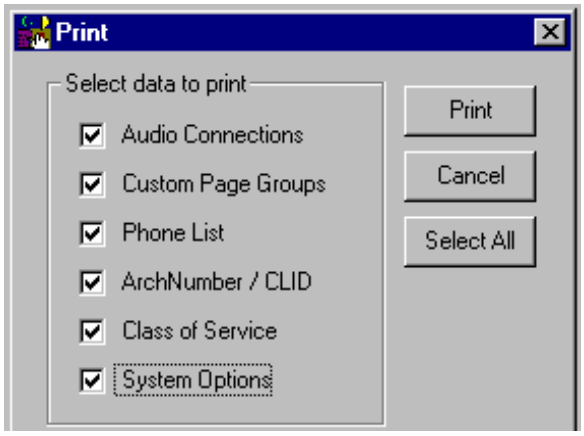
## *MENU OPTIONS*

### *PRINT*

The print option allows the system to provide a hard-copy verification of how the system is programmed. To print, the PC must be connected to a printer via the RS-232 serial printer port (DB9 connector).

To access this option, select **File** and then **Print.** A screen (shown below) appears to allow selection of all programmed options or individual options for printing.

This screen shows all items selected for printing.

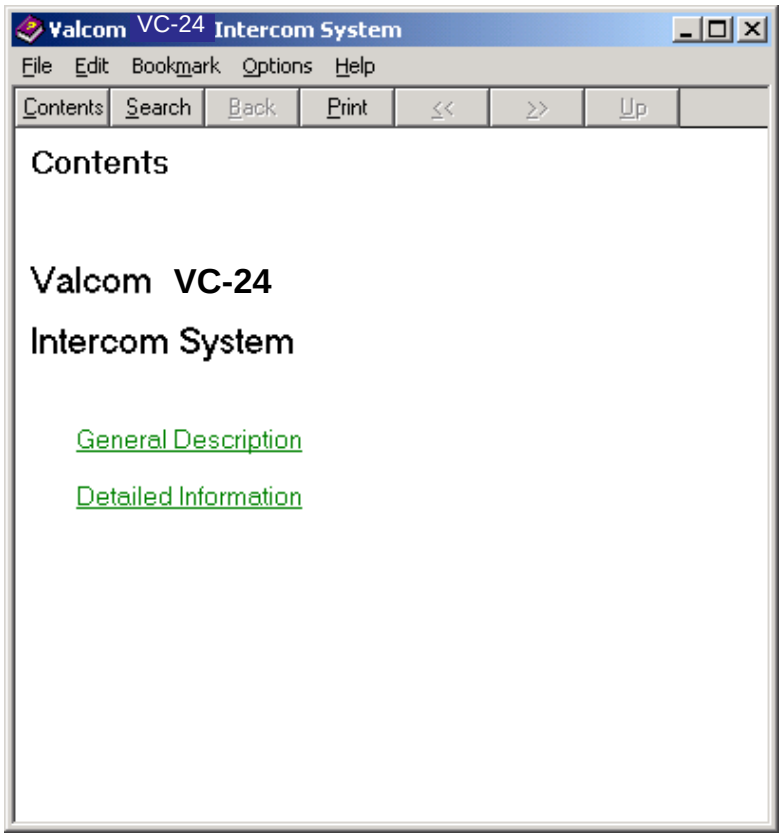



### *WINDOW*

The pull-down menu titled **Window**, allows several screens to be closed at once. Instead of going through several open screens, closing them individually, select **Window, Close All** or select the screens individually from the pull-down window.

### *HELP*

The **Help** pull-down menu provides on-screen definition of elements provided by the VC-24 Talkback Intercom System. Select **Help**, select **Contents**. Click on **General Description** or **Detailed Information** to view the list of topics available through the Help menu.




***EXIT***

Select **Exit** from the **File** pull down to close the Programming Tool.

# *OPERATION*

### Originate a Handsfree Page

- Lift handset, receive dial tone (default)
- Dial access code
- Hear alert tone (default) in handset and at speaker
- Issue page
- Anyone hearing page can reply handsfree by speaker
- Hang up to terminate call

### Originate a Group Page

- Lift handset, receive dial tone (default)
- Dial group page access code
- Hear alert tone (default) in handset and at speaker
- Issue page
- Hang up to terminate page

### Originate a "Serial" Group Page

- Lift handset, receive dial tone (default)
- Press #60 and codes for groups to receive page (attendant receives a single beep tone after each group code; if an invalid group is dialed attendant receives an error tone and is allowed to re-enter the group)
- Press "*" to connect the page after last group is dialed
- Hear alert tone (default) in handset
- Issue page
- Hang up to terminate page

### Originate an All Call Page

- Lift handset, receive dial tone (default)
- Dial the all call page code (#11 system all call; #12 for external all call-multiple VC-24s)
- Hear alert tone (default) in handset
- Issue page (if multiple VC-24s are wired together and the external all call page is dialed, the page will be heard through all interconnected VC-24s)

### One-Way Page with Meet Me/Follow Me

Attendant makes an all call or group page to locate a specific individual -

- Called person presses call button two times at any talkback speaker (this cancels the page to all other speakers and connects the attendant to the answering speaker)
- Called person presses the call button of another speaker included in the original page two times, the call is disconnected from the active speaker and reconnected at the new speaker.
- Handsfree alert tone notifies the attendant and speaker location the Meet Me or Follow Me was successful.

### Inhibit

Allows the use of a single line phone ("A" lead modified). When the phone goes offhook, all handsfree, group, and/or all call pages are cancelled and the phone is connected to the attendant.

### Override Page Port

When a phone connected to the override page port goes offhook, it is immediately connected to all speakers for a one-way page. Any existing handsfree or one-way pages will be placed at the top of the queue for reconnection when the priority phone releases. The attendant phone receives a repeat beep tone alerting of an override.

### Queue Operation

Attendant phone is in use and another call is placed from a speaker location, the phone and connected speakers receive a queued call tone (single or triple beep tone), and the call is placed in the queue. Pressing the "#" key twice while on a call with one or more queued calls, will disconnect the current call and connect the attendant to the next call in the queue. If the attendant hangs up while calls are in the queue, the phone will ring and the next call in the queue will be connected when the phone is answered. Queued calls will be accessed in the order received with a maximum of 20 calls being in the queue at one time. If the queue is full, additional calls are ignored unless the last queued call has a lower priority than the incoming call in which case the lower priority call will be replaced in the last position by the new call.

### Placing a Call from a Speaker

- Press call button, attendant phone rings
- Attendant answers, phone and speaker are connected through handsfree circuit
- Hear alert tone in handset and at speaker
- Person at speaker converses handsfree to attendant
- Attendant must hang up to terminate call

### Placing a Call from a Door Box

- Press door button, attendant phone rings
- Attendant answers, phone and speaker are connected through handsfree circuit
- Hear alert tone in handset and at speaker
- Person at speaker converses handsfree to attendant
- Attendant unlocks door by pressing "*" key twice while connected to door speaker (door speaker must be connected to one of the last four zones of the main board making the door unlock feature available.)
- Attendant must hang up to terminate call.

### Remote Station Access - Call Button

| Button Presses | Function |
|---|---|
| 1 press | Originate call to attendant |
| 2 presses | Meet-Me / Follow-Me if appropriate (see definitions) |
| 3 presses | Ignored |
| 4 or more presses | Originate emergency call to attendant |

### Attendant Station Dialing Plan

#### 2 Digit Zone Access to Individual Stations:

| Dial Code | Function |
|---|---|
| 10..33 | Handsfree speakers - Main board |
| "**" during hf to zone 30,31,32, or 33 | Operate relay for longer of 2.5 seconds or duration of second press; operation may be repeated as long as connected. |

(Station 1 = code 10, station 2 = code 11, ……station 24 = code 33)

#### 3 Digit Zone Access to Individual Stations:

| Dial Code | Function |
|---|---|
| 101..124 | Handsfree speakers - Main board |
| "**" during hf to zone 121, 122, 123, or 124 | Operate relay for longer of 2.5 seconds or duration of second press; operation may be repeated as long as connected. |

(Station 1 = code 101, station 2 = 102, ….. station 24 = code 124)

#### Page Codes

| Dial Code | Groups | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| **#10 external all call (multiple VC-24s)** | | | | |
| **#11 system all call** | | | | |
| **#12** | | | | |
| **#14** | | | | |
| **#60** | (Example: #60 + 71 + 73 + *) | | | |
| **#61** | | | | |
| **#62** | | | | |
| **#70** | | | | |
| **#71** | | | | |
| **#72** | | | | |
| **#73** | | | | |
| **#92** | *Set Time hh:mm:ss* | | | |
| **#93** | *Cancel Emergency Tone* | | | |
| **"*" during 1-way page** | *Mute page while waiting for "Meet Me"* | | | |
| **"##" during any connected call** | *Disconnect current call connect to next queued call or receive dial tone if none queued.* | | | |

#60 - Serial Group Call - User may select any combination of page codes during dialing. Group 10 (External All Call) is not a valid code selection when using these dial codes.

The attendant may dial a new zone or group during a conversation. The current conversation will be disconnected and the new request connected without the attendant needing to return to dial tone.

### NOTE:

For Group page selection and Background Music Programming:

| | |
|---|---|
| Group 1 | Stations 1 – 6 |
| Group 2 | Stations 7 – 12 |
| Group 3 | Stations 13 – 18 |
| Group 4 | Stations 19 - 24 |

### BGM Dialcodes:

| | |
|---|---|
| #960 | Background Music OFF |
| #961 | Background Music ON |

**TROUBLESHOOTING CHART**

| *Problem* | *Corrective Action* |
|---|---|
| No system operation. | • Verify AC voltage is present at the receptacle.<br>• Check the fuse located on the bottom of the unit. If blown, replace with a 1 amp, 250 Vac fuse.<br>• Verify that 25 pair cable connectors are completely plugged into circuit board connectors.<br>• Refer to Figure 1 and verify all connections. |
| No paging at speaker. | • Refer to Figure 1 and adjust volume. |
| Paging at speaker but no reply from speaker. | • Refer to Figure 1 and adjust volume. |
| No system ringing when call button is pressed. | • Verify all associated connections. |
| Background music not heard at speakers. | • Verify connection of speakers and background music input. |
| No dial tone. | • Refer to programming. |

## *TECHNICAL ASSISTANCE*

When trouble is reported, verify there are no broken connections. Assistance in troubleshooting is available from the factory. Call (877) 427-2166 and ask for Technical Support.

Valcom equipment is not field repairable. Valcom, Inc. 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 nature of the problem. Send the unit to:

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

**Class Connection™ 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 two years 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 Rd
Roanoke, VA 24019-5056
877-427-2166 / FAX: 540-362-9800

# Glossary of Terms

*(Numbers in parenthesis are the pin outs on P7 connection block required for this feature)*

***Attendant Port (26/1)*** - Primary system access is achieved on this pair. A dedicated single line telephone, electronic key system C. O. line position, or PABX loop start trunk port is required for access.

***Background Music Input (28/3)*** - Input for low level music source (i.e., V-2952).

***Clock Activate (31/6)*** - Input to enable tone source for system broadcast.

***Clock C. C. (32/7)*** - Contact closure output follows clock activate to enable external tone source.

***Clock Sync (45/20)*** - Input to reset system time to 0200 hours.

***Common Audible C. C. (27/2)*** - Provides contact closure when attendant station is signalled - follows ring pattern.

***Dry Priority Activate (36/11)*** - Input to enable priority page port when used with telephone system page port.

***Emergency Activate (33/8)*** - Input to enable external tone source for system broadcast.

***Emergency C. C. (34/9)*** - Contact closure follows emergency activate to enable external tone source.

***External Tone Input (30/5)*** - Input for low level tone source (i.e., V-9927A).

***Global All Call Activate (43/18)*** - Control pair for use with multiple VC-24 systems that require all call pages to be broadcast to all interconnected systems.

***Global Page Link (44/19)*** - Audio pair for use with multiple VC-24 systems that require all call and/or priority pages to be broadcast to all interconnected systems.

***Global Priority Activate (42/17)*** - Control pair for use with multiple VC-24 systems that require priority pages to be broadcast to all interconnected systems.

***Inhibit (37/12)*** - If a single line telephone is desired for "Meet Me Answer" a single line "A" lead control telephone and a 5.1K ohm resistor is required. The tip and ring of the telephone connects to the W/BL (26/1) pair, the "A1" lead connects to GND (O/BK, pin 12) , the "A" lead has the 5.1K ohm resistor placed in series and the resistor terminates on Inhibit (BK/O, pin 37).

***Night Ring Activate (46/21)*** - Input to enable night ringing to be broadcast throughout system when contact closure is detected on this pair.

***Override Page Port (35/10)*** - Secondary system access is provided on this pair. A dedicated single line telephone, PABX loop start trunk port, electronic key system C. O. line position or page port with contact closure is required for access. All other system activities are suspended while the override page port is active.

***Riot Mode (29/4)*** - Input to allow attendant port to receive only emergency calls (open - normal mode; closed - riot mode enabled).

***Station 21 C. C. (47/22), Station 22 C. C. (48/23), Station 23 C. C. (49/24), Station 24 C. C. (50/25)*** - Contact closure to activate door strike plate from attendant port. Enabled when "*" is pressed twice after communication has been established between attendant port and station.