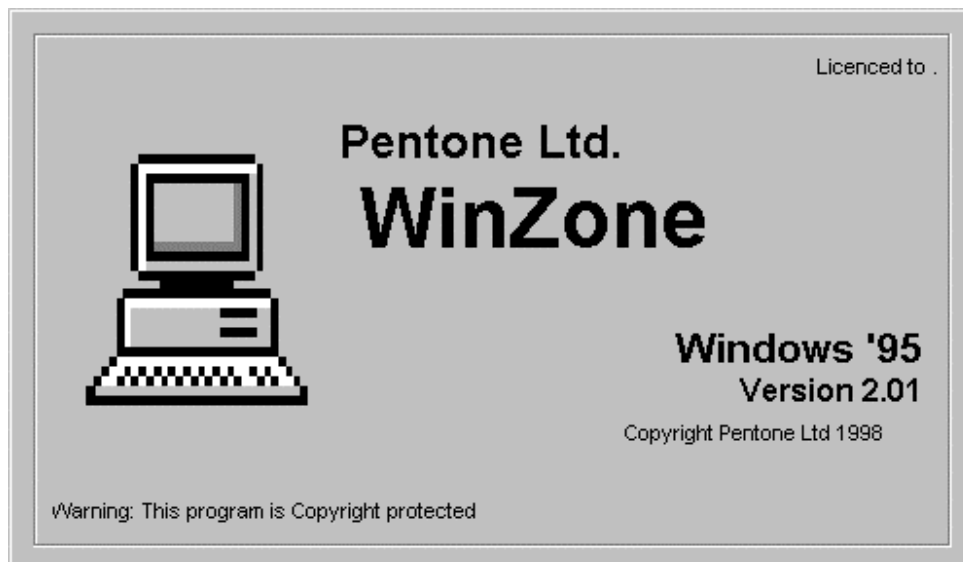




WinZone for Windows 95 SelCall Zoning Software



Release History

Rev 2.01

12 October 1998

First release



Simon / Rob



Pentone Ltd., 203 Abbeyfield Rd., Sheffield, S4 7AW.

☎ (0114) 244 0303

FAX (0114) 244 9916

(c) Pentone Ltd. 1998

Table Of Contents

1.0	Introduction	3
2.0	Hardware Requirements	3
3.0	Installation	4
3.1	Hardware	4
3.2	Software.....	5
3.2.1	Configuration.....	6
3.2.1.1	Setup Passwords	6
3.2.1.2	Setup Decoder	7
3.2.1.3	Setup Encoder.....	8
3.2.1.4	Setup Masks.....	9
	<i>Examples:</i>	9
	<i>Example</i>	10
3.2.1.5	Setup ID's.....	11
	<i>Example:</i>	11
	<i>Example:</i>	11
3.2.1.6	Setup Zones	12
3.2.1.7	Setup Status	14
3.2.1.8	Setup Alerts	15
3.2.1.9	Setup Logs	16
4.0	The User Screen	17
4.1	Sending a Call.....	17
4.2	Shutting Down the Software	18

1.0 Introduction

The Pentone WinZone software is designed to perform SelCall encoding, decoding and display functions on a PC compatible under MS Windows 95. The system allows for a range of advanced features including:-

- Fully configurable Encode /Decode Parameters
- Up to 20 re-nameable Zone Boxes
- Separate Call Stacks for Standard and Priority calls
- Radio Idents may be cross-indexed to text strings
- Statuses may be colour-code linked to text strings
- Encode facilities for standard calls, Kill Calls, and UnKill Calls
- Call Logging to hard disk.
- Capacity for up to 1000 Idents, 20 Zones, and 10 Statuses

Call data is recorded in standard Comma Separated Variable (CSV) format for compatibility with spreadsheet and database programs.

Since the system uses the versatile Pentone PSD1 SelCall Dispatcher module to interface to the radio system, it may be easily configured to operate in a wide range of signalling environments with differing tonesets, timings etc.

For further information about Pentone's range of SelCall and radio data products please phone or fax the number on the front of this applications note.

2.0 Hardware Requirements

The software runs under Microsoft Windows 95. The minimum PC specification is:-

- 486 66MHz (Pentium recommended)
- 8Mb RAM (16Mb recommended)
- 20Mb Hard disk drive space
- 3.5" Floppy disk
- Sound card and Speakers
- 640*480 VGA Colour screen

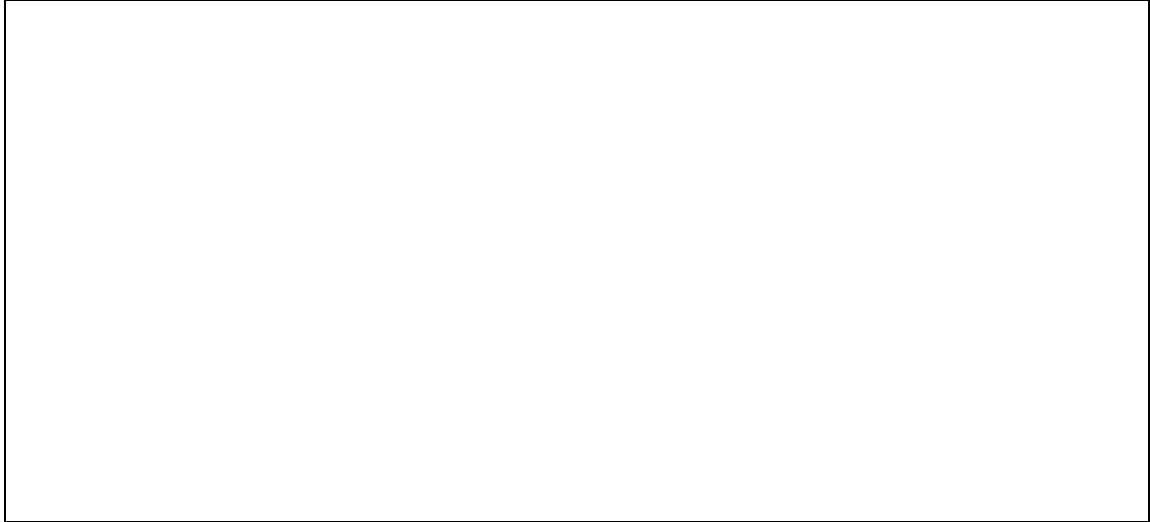
If a parallel printer is to be attached to the PC then the computer must be equipped with a second parallel port.

Note: A faster PC will give quicker call response, particularly in noisy environments.

3.0 Installation

3.1 Hardware

The system should be connected as outlined below.



System Connection Diagram - Fig 1

The PSD1 interface to the radio system involves the following signals:

PSD1 Pin	PSD1 Signal	Function
2,3,23	GND	Power / Signal Ground
8	MIC MUTE	Mute during SelCall Generation (optional)
9	PTT OUT	PTT drive (optional)
14	LI	Mic PTT monitor
16	UDC	Unregulated 7-14v DC in
17	SO	SelCall Tones Out
22	SI	SelCall Tones In

NOTE: The MIC MUTE, PTT OUT, and LI signals are configurable Active High or Low within the software. These signals must be clamped to the PSD1's 0-5v input range. The LI signal is not required in decode-only applications.

The PSD1 Applications note should be studied before attempting to interface the module to the radio system.

3.2 Software

The software is supplied on 3 floppy disks. Disk 0 contains the PSD1 device driver and disks 1-2 contain the WinZone applications software. Software installation should proceed as follows:

1. Boot the PC into DOS mode.
2. Insert disk 0 and copy the device driver to the root directory of drive C
COPY A:\DESPATCH.SYS C:
3. Set the Config.sys file to install the device driver on boot
EDIT C:\CONFIG.SYS
add the line
DEVICE=C:\DESPATCH.SYS
save the edited file.
4. Reboot the PC into windows. Assuming the PSD1 has not yet been connected / powered an error message will be displayed during boot-up. Ignore the message.
5. Use device manager to remove control of the PSD1 parallel port from windows control
click START
select SETTINGS / CONTROL PANNEL
double click on SYSTEM
click on the DEVICE MANAGER tab
click on PORTS
click on the port that will be used to communicate with the PSD1 (typically LPT1)
in the 'Device Usage' section set the 'Disable in this Hardware Profile' check box.
6. Shut down and turn off the PC.
7. Connect the PSD1 to the port and turn on power to the PSD1.
8. Reboot windows. If the PSD1 is not detected correctly an error message will be displayed.
9. Insert WinZone disk1.
10. Click on MY COMPUTER / DRIVE A
11. Revue the 'README.TXT' file for any 'stop-press' information.
12. Double click on SETUP.
13. Follow the on-screen instructions.
14. Once installation is complete the PC should be configured to run the software on boot.
15. Click START
Select SETTINGS / TASK BAR
click on the Start Menu Programs Tab
click ADD
enter the path / name of the application EXE file (normally C:\Program Files\WINZONE.EXE)
then click NEXT
Select the STARTUP folder and click NEXT, then FINISH.
16. Reboot the PC.

3.2.1 Configuration

On running the software all configurable parameter values are automatically set up to default values in the WinZone section of the Windows 95 Registry.

The software supports 3 levels of access:

User Level – no password required, no access to setup menus.

Manager Level – Manager password required, no access to encoder/decoder parameters, can change Manager Password

Dealer Level – Dealer password required, full access to all menus, can change Manager and Dealer passwords.

The default Manager password is 'Manager'

The default Dealer password is 'Dealer'

(Note the passwords ARE case-sensitive)

To get full access to the setup menus log on to the software at Dealer level.

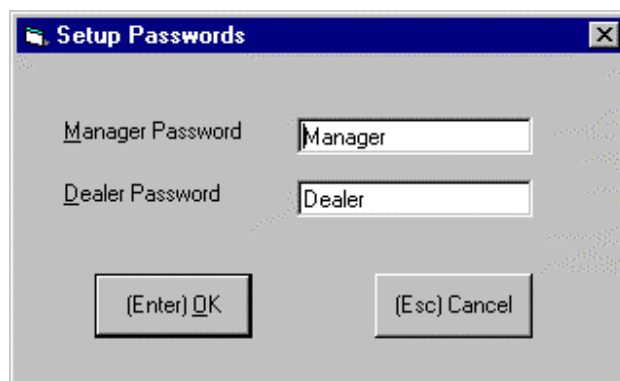
Click the Logon Menu and enter the Dealer password . The Setup Menu item will now be shown in bold indicating its availability.

On Power up the software enters User mode. To re-log on at user level simply enter an invalid password.

NOTE: In order to prevent inexperienced operators accidentally running other programs on the PC whilst WinZone is running a number of windows key combinations are disabled when in User Mode. The disabled keys combinations include CTL-ESC, ALT-TAB, CTL-F4, and the Start keys. The windows Start button is also disabled.

3.2.1.1 Setup Passwords

Click the Setup Menu and select Setup Passwords



The passwords may be changed as required. If the password settings are lost then contact Pentone for assistance.

3.2.1.2 Setup Decoder

Click the Setup Menu and select Setup Decoder.

Setup Decoder

Min Tone Period: 20 mS Max Tone Period: 50 mS Bandwidth (%): 3 %

ToneSet: USER, **EEA**, CCIR, ZVEI1, PZVEI, ZVEI2, ZVEI3

NoTone Timer: 20 mS, 40 mS, 60 mS, **80 mS**, 100 mS, 120 mS, 140 mS, 160 mS

☒ Allow Ext. 1st Tone ☐ Debug

Tone Table

Digit	Freq
0	1981
1	1124
2	1197
3	1275
4	1358
5	1446
6	1540
7	1640
8	1747
9	1860
Group	1055
B	930
C	2247
D	991
Repeat	2110
F	2400

(Enter) OK (Esc) Cancel

The **Min Tone Period** setting is the minimum duration SelCall tone that will be accepted as valid. This should normally be set at 20mS less than the expected duration. e.g. for CCIR 100mS operation set the Min Tone Period to 80mS.

The **Max Tone Period** setting is the maximum duration SelCall tone that will be accepted as valid. This should normally be set at 10mS more than the expected duration. e.g. for CCIR 100mS operation set the Min Tone Period to 110mS.

The **Decode Bandwidth** setting specifies the frequency tolerance to be applied to SelCall tones. This should normally be set to 3%.

The **ToneSet** setting allows the selection of the standard international ToneSet to be used for all decode/encode operations. The frequencies used by the selected ToneSet are shown in the 'Tone Data' table to the right of the window.

The **NoTone Timer** setting specifies the length of tone absence that will signify the end of a tone sequence. This is typically set to 1.5* the expected tone duration. e.g. for CCIR 100mS set the NoTone Timer to 150mS.

The **Allow Extended 1st Tone** check box allows extended-duration first tones to be accepted by the decoder even when they are outside of the Max Tone Period setting. Extended first tones are often used to stabilise repeater systems.

The **Debug** check box allows display of debug information. Debug mode is provided for use during configuration only and this setting must not be left enabled after configuration since it will cause progressively slower operation of the software.

3.2.1.3 Setup Encoder

Click the Setup Menu and select Setup Encoder

During the encode of a tone sequence the following timers apply:
 LI is checked. The encode is buffered until LI becomes INACTIVE
 PTT and MicMute are driven to the ACTIVE state (if required)
 wait for **lead-in Time** (allows the transmitter to stabilise)
 generate the 1st tone for the **1st Tone Time** (may be extended duration to allow repeater access)
 wait for **Gap Time** between each tone
 generate other tones for **Tone Time**
 wait for **lead-out Time**
 PTT and MicMute driven to the INACTIVE state. (if required)
 IF LI remained INACTIVE throughout the encode then the encode is removed from the encode buffer, else the encode will be repeated.

The parameters shown above are for a typical EEA 40mS application.

Dependent on other settings, when a SelCall is decoded an automatic acknowledgement may be encoded. The "ACK Type" setting allows the acknowledgement to be sent as a simple BEEP (suitable for use in open systems, or where the mobiles do not have a decoder), or as a SelCall.

The **PTT Drive** setting specifies the active state of the PSD1 PTT Out signal.

The **MIC Mute** setting specifies the active state of the PSD1 MIC MUTE output.

The **MIC PTT** setting specifies the active state of the PSD1 LI input.

3.2.1.4 Setup Masks

Click the Setup Menu and select Setup Masks

Form1

Auto ACK

Zoning CallMask 0ALLS ☐

Standard CallMask 1AALS ☐

Priority CallMask 2AALS ☐

CallMask 30AAA ☐

Kill CallMask 40AAA ☐

UnKill CallMask 50AAA ☐

ACKMask 60AAA ☐

A = Ident Digit
S = Status Digit
L = Location Digit

A = Ident Digit

(Enter) OK (ESC) Cancel

This menu provides 3 separate Decode masks, and 4 separate Encode masks. The Decode masks are:

Zoning CallMask – Calls passing this mask cause an update of the Zone Box displays

Standard CallMask – Calls passing this mask cause the call ID to be added to the Standard Call Stack display

Priority CallMask – Calls passing this mask cause the call ID to be added to the Priority Call Sack display

For each decode mask there is an associated Auto-Ack setting. If the ACK box is ticked then the system will automatically generate an acknowledgement call whenever a qualifying call is decoded.

The masks are not exclusive so, e.g. if the Zoning and Standard CallMasks are set to be the same, and assuming a qualifying call is decoded), then the call Ident will be shown in the Standard Call Stack AND the Zone boxes will be updated.

Each Decode mask is made up of the characters 0-9 (fixed digit), 'A' (Ident digit), 'S' (Status digit), 'L' (Zone digit). Within each Decode Mask there can be up to 3 Ident digits ('A'), 1 Status digit ('S') and up to 2 Location digits ('L')

Examples:

Decoded Call	Mask	Result
12345	AAALS	Ident=123, Zone=4, Status=5
12345	ASLLA	Ident=15, Zone=34, Status=2
123456	ASLLA	Call rejected (length of call <> length of mask)
12345	12ALS	Ident=3, Zone=4, Status=5
13456	12ALS	Call rejected (Call does not start in '12')
13456	1XALS	Ident=3, Zone=4, Status=5

Each Encode masks is made up of the characters 0-9 (fixed digit), and 'A' (Ident digit). The 4 Encode masks are:

CallMask – for standard Call encodes.

Kill Mask – for Kill call encodes.

UnKill Mask – for UnKill encodes.

ACK Mask – for automatic (system-generated) acknowledgement encodes.

On requesting a Call, Kill, or UnKill encode, the user will be prompted to enter the required numeric ID. The supplied ID will be padded with leading zeros (if required), and fitted into the 'A' positions within the relevant Mask.

When an automatic acknowledgement is to be encoded the Ident is first stripped from the decoded call, padded with leading zeros (if required), and then fitted into the 'A' positions within the ACK mask. NOTE: the acknowledgement will only then be sent as a SelCall if so configured in the Setup/Encoder Menu.

Example

Group Three Security uses mobiles programmed as follows:

PTT (ANI) encodes '001' followed by a two digit ID

SEND A encodes '1' followed by a two digit ID, a zone digit (from the keypad) and a status digit (from the keypad).

SEND B encodes '999' followed by a two digit ID.

Mobile 23 is programmed to decode '60023' as a call, '70023' as a kill call, '80023' as an unkill call, and '50023' as an acknowledgement.

The Zoning CallMask is set to '1AALS', the Standard CallMask is set to '001AA' and the Priority CallMask is set to '999AA'. Auto ACK is set for priority calls only.

The encode Call Mask is set to '600AA', the Kill mask is set to '700AA', the unkill mask is set to '800AA' and the ACK mask is set to '500AA'.

When a Standard Call is requested at the keyboard the software will prompt the user to enter up to 2 digits of ID (since there are two A's in the encode mask). If the user enters (e.g.) '6' then the system will pad the ID to '06' and fit this into the mask. The resulting encode will then be '00106'. If radio 23 sends a priority call '99923' the radio Ident will be displayed in the Priority Call Stack and an auto-ack '50023' will be encoded.

3.2.1.5 Setup ID's

Click the Setup Menu and select Setup ID

Set Radio ID names

ID No (3 Digits) 000

ID Text 000 ☐ Killed

000 000
001 001
002 002
003 003
004 004
005 005
006 006
007 007
008 008
009 009
010 010
011 011
012 012
013 013
014 014
015 015
016 016
017 017

(Enter) OK (Esc) Cancel

The Setup ID menu allows radio ID codes to be cross-indexed to text and allows the Kill state of the radio to be configured.

Example:

Radio ID number 23 is issued to Fred Smith.

Type the number 23 in the 'ID No' field. The 'ID Text' field and the cross-index list will reflect the current cross-index.

Type '23Fred' in the 'ID Text' field

Click 'OK'

Calls decoded from radio 23 will now be displayed as originating from '23Fred'.

Note: the Zone Box will show the first 6 characters of the text.

Example:

Radio ID number 16 has been stolen and is to be killed.

Type the number 16 in the 'ID No' field. The 'ID Text' field and the cross-index list will reflect the current cross-index.

Check the 'Killed' check box.

Click 'OK'

A Kill call will be sent to radio 16. Any subsequent calls from radio 16 will trigger an automatic re-send of the kill call.

3.2.1.6 Setup Zones

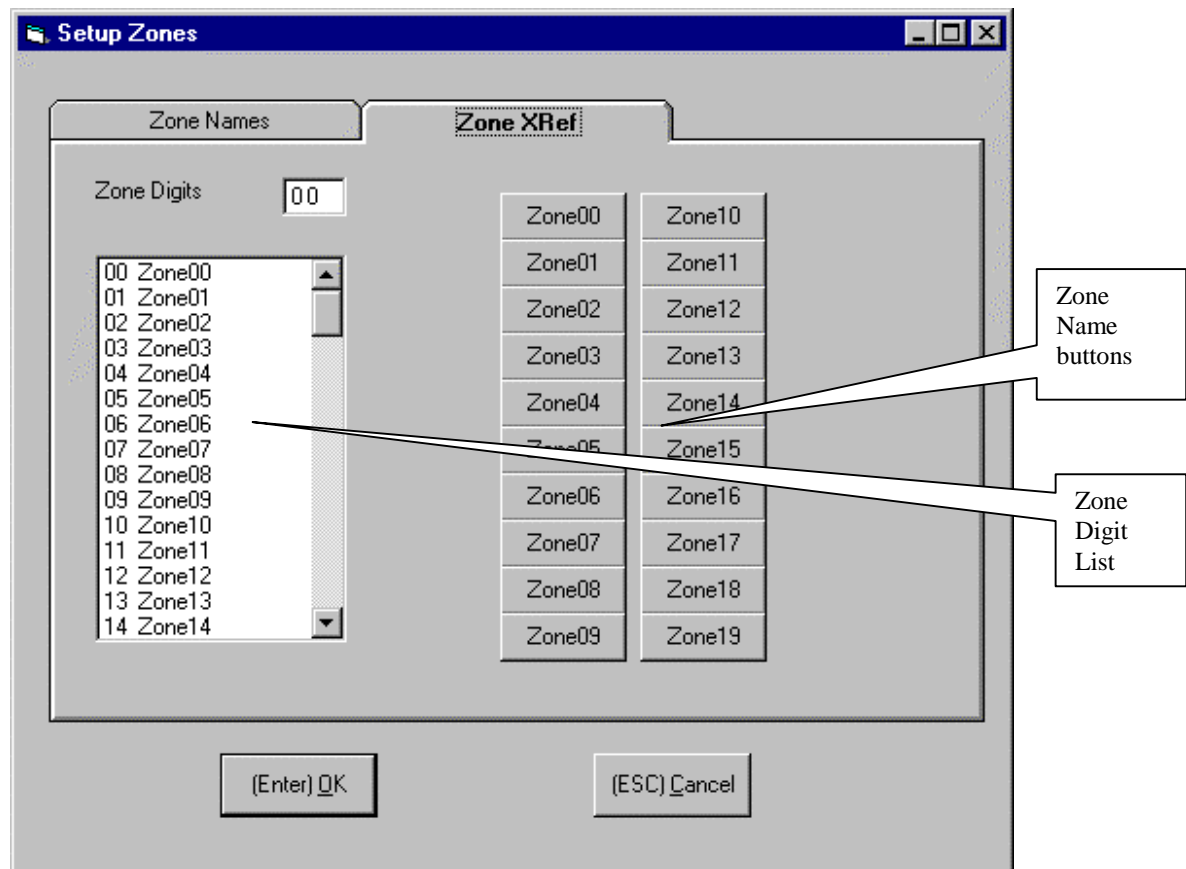
Click the Setup Menu and select Setup Zones

Zone Names		Zone XRef	
Name for ZoneBox 0	Zone00	Name for ZoneBox 10	Zone10
Name for ZoneBox 1	Zone01	Name for ZoneBox 11	Zone11
Name for ZoneBox 2	Zone02	Name for ZoneBox 12	Zone12
Name for ZoneBox 3	Zone03	Name for ZoneBox 13	Zone13
Name for ZoneBox 4	Zone04	Name for ZoneBox 14	Zone14
Name for ZoneBox 5	Zone05	Name for ZoneBox 15	Zone15
Name for ZoneBox 6	Zone06	Name for ZoneBox 16	Zone16
Name for ZoneBox 7	Zone07	Name for ZoneBox 17	Zone17
Name for ZoneBox 8	Zone08	Name for ZoneBox 18	Zone18
Name for ZoneBox 9	Zone09	Name for ZoneBox 19	Zone19

(Enter) OK (ESC) Cancel

The Setup Zones menu comprises two tabbed views, providing two functions. The Zone Names section allows the name of each Zone Box to be specified, and the Zone Xref section allows the (up to 100) zone digit codes to be mapped into the (up to 20) zone boxes.

Once the Zone Names have been set up the Zone Xref view should be selected.



Example:

Calls with zone digits '12', '13', and '14' are to be displayed in a Zone named 'Garage'.
 Select the Zone Names view and set the name for a zone bow to be 'Garage'.
 Select the Zone Xref view. Note that one of the Zone Name buttons will now be labelled 'Garage'.
 Using the mouse select zone digits '12' in the Zone Digits List and click the 'Garage' button.
 Repeat the process for digits '13' and '14'.

3.2.1.7 Setup Status

Click the Setup Menu and select Setup Status

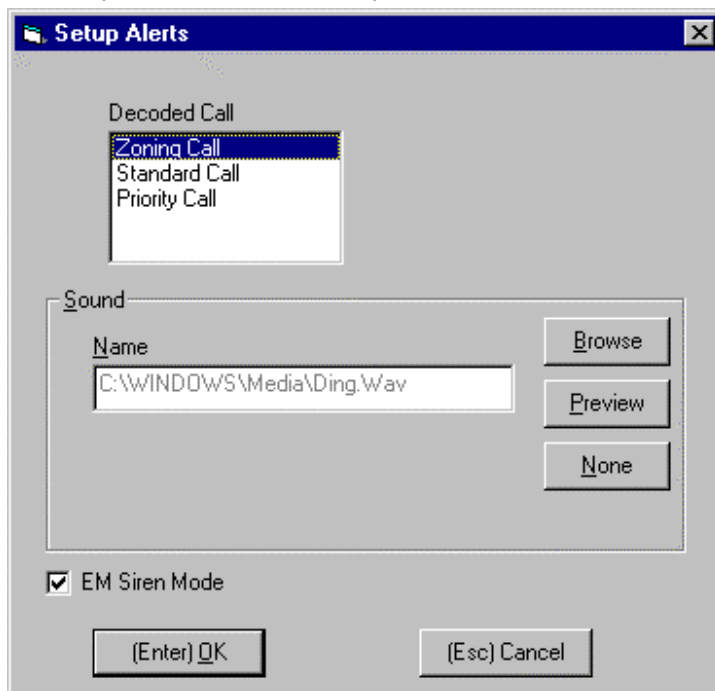
The screenshot shows a window titled "Setup Status" with a table of 10 status configurations. Each row has a "Status" number, a "Displays as" text box, a "Colour" row of 12 buttons, and a "Text" text box. Callouts point to the "Colour Buttons" and "Text Box" for Status 5. At the bottom are "[Enter] OK" and "[ESC] Cancel" buttons.

Status	Displays as	Colour	Text
0	Status0	[Black][Blue][Green][Teal][Red][Purple][Grey][Light Blue][Cyan][Magenta][Yellow]	Status0
1	Status1	[Black][Blue][Green][Teal][Red][Purple][Grey][Light Blue][Cyan][Magenta][Yellow]	Status1
2	Status2	[Black][Blue][Green][Teal][Red][Purple][Grey][Light Blue][Cyan][Magenta][Yellow]	Status2
3	Status3	[Black][Blue][Green][Teal][Red][Purple][Grey][Light Blue][Cyan][Magenta][Yellow]	Status3
4	Status4	[Black][Blue][Green][Teal][Red][Purple][Grey][Light Blue][Cyan][Magenta][Yellow]	Status4
5	Status5	[Black][Blue][Green][Teal][Red][Purple][Grey][Light Blue][Cyan][Magenta][Yellow]	Status5
6	Status6	[Black][Blue][Green][Teal][Red][Purple][Grey][Light Blue][Cyan][Magenta][Yellow]	Status6
7	Status7	[Black][Blue][Green][Teal][Red][Purple][Grey][Light Blue][Cyan][Magenta][Yellow]	Status7
8	Status8	[Black][Blue][Green][Teal][Red][Purple][Grey][Light Blue][Cyan][Magenta][Yellow]	Status8
9	Status9	[Black][Blue][Green][Teal][Red][Purple][Grey][Light Blue][Cyan][Magenta][Yellow]	Status9

The Setup Status menu allows configuration of the colour code and text to be used for each status. Idents displayed in the Zone Boxes are displayed in the appropriate status colour. The user screen also shows a colour coded list of the 10 text strings as a help prompt.. For each status the colour code is selected by clicking on one of the colour code buttons and the text is set by typing into the appropriate text box.

3.2.1.8 Setup Alerts

Click the Setup Menu and select Setup Alerts.



WinZone may be set to play an alert (.wav file) via the sound card and speakers whenever a call is decoded. A separate alert may be generated for each decoded call type.

To configure the alert for a particular call type:

Using the mouse select the required call type in the 'Decoded Call' list.

Click the Browse button to see a list of the available .wav files on the computer.

When a file has been selected it may be played using the Preview button.

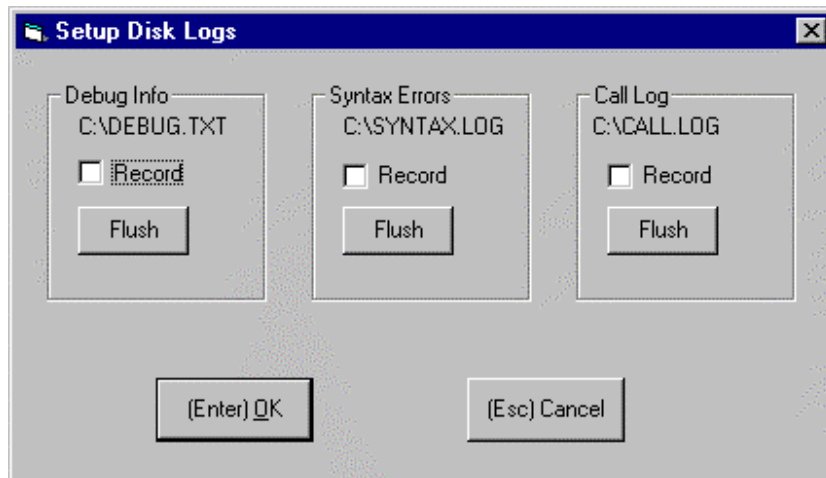
Clicking the None button will cause no alert to be generated for the selected decode type.

Clicking the OK button completes configuration.

If the EM Siren Mode box is ticked then when a Priority call is decoded the associated alert will be continuously repeated until the user turns the alert off.

3.2.1.9 Setup Logs

Click the Setup Menu and select Setup Logs.



WinZone can record three separate log files:

C:\DEBUG.TXT is a log of all SelCall operations. It includes details of all encoded and decoded tones in native PSD1 format. In busy environments the DEBUG.TXT log can grow at an alarming rate (50-100Mb per month) so although this log provides a great deal of useful information when analysing SelCall problems it should not normally be left running.

C:\SYNTAX.LOG is a log of program errors. This log should normally be left running to keep a record of any problems.

C:\CALL.LOG is a log of call decodes, encodes, and user operations. The data is stored within the log in standard Comma Separated Variable (CSV) format and can thus be easily imported into a spreadsheet for analysis. The Call Log will be of the form:

```
Date,Time,START LOG,,,,,
Date,Time,ANICALL,decode,IDText,StatusText,LocationText
Date,Time,PRIORITYCALL,decode,IDText,StatusText,LocationText
Date,Time,ZONECALL,decode,IDText,StatusText,LocationText
Date,Time,ENCODING,encode,,t
Date,Time,END LOG,,,,,
```

Each log file is in text format and may accordingly be viewed with any text editor (e.g. Edit, Notepad, or Wordpad).

Each log may be enabled by checking the Record tick box. If the log's Flush button is clicked then the log is copied into a .BAK file, flushed, and re-started. This allows the log file to be inspected whilst the program is running.

For example to save the Call Log file to floppy disk click the Call Log Flush button, shell out to 'My Computer' and copy CALL.BAK to the floppy disk.

4.0 The User Screen

The screenshot displays the 'WinZone User Level' interface. At the top, there is a menu bar with 'File', 'Logon', and 'Setup'. Below this, the time '16:51:44' and date '20/10/98' are shown. The main area consists of a grid of 20 zone boxes arranged in two rows of ten. The first row has headers 'lost', 'cent', 'Zone02', 'Zone03', 'Zone04', 'Zone05', 'Zone06', 'Zone07', 'Zone08', 'Zone09', and 'Calls'. The second row has headers 'Zone10', 'Zone11', 'Zone12', 'Zone13', 'pound', 'Zone15', 'Zone16', 'Zone17', 'Zone18', 'found', and 'Priority'. Below the grid, there are ten status boxes labeled 'Status0' through 'Status9', each with a different color. At the bottom, there are three buttons: 'C=Call', 'K=Kill Call', and 'U=UnKill Call', followed by three larger buttons: 'Quiet (Q)', 'Clear Priority (F1)', and 'Clear Calls (Space)'.

The Users screen comprises up to 20 Zone Boxes, a Standard Call Stack, and a Priority Call Stack.

When a zoning call is decoded the radio ident text is displayed in the appropriate Zone Box. The Ident is colour-coded to indicate status, and an alert sound is optionally played.

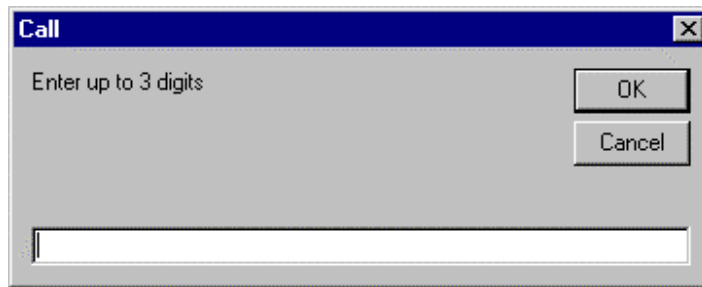
When a Standard Call is decoded the radio ident text is displayed at the top of the Calls Stack and an alert sound is played. The Calls stack may be scrolled with the mouse and may be cleared by clicking the Clear Calls button or by pressing the Space Bar on the keyboard.

When a Priority Call is decoded the radio ident text is displayed at the top of the Priority Stack and an alert sound is played. Depending on configuration the sound may be played once, or repeated continually (EM Siren Mode). The siren may be turned off by clicking the Quiet button with the mouse or by pressing the 'Q' key on the keyboard. The Priority stack may be scrolled with the mouse and may be cleared by clicking the Clear Priority button or by pressing the 'F1' key on the keyboard.

4.1 Sending a Call

The following procedure is used to make a standard call to a radio.

1. Press the 'C' key on the keyboard.
2. A dialogue box will appear asking for the required radios NUMERIC ID



Type in the required radio ID (e.g. to call radio 123 enter '123') then press the Enter key on the keyboard.

WinZone will put the required call in a queue and send it as soon as the system is available. The call cannot be sent while the base station microphone is in use but will be sent as soon as the PTT button on the microphone is released.

The same procedure may be used to send a Kill Call to a radio (press the 'K' key) or to send an UnKill call (press the 'U' key)

4.2 Shutting Down the Software

The software may be shut down by using the File/Exit menu. Before the software stops a record will be made in the Call Log indicating the time and date of the shutdown. NOTE: to prevent inexperienced operators from accidentally running other windows programs on the computer, WinZone locks-out certain windows key combinations including ALT-TAB, ALT-ESC, CTL-F4, and the Start Keys.

