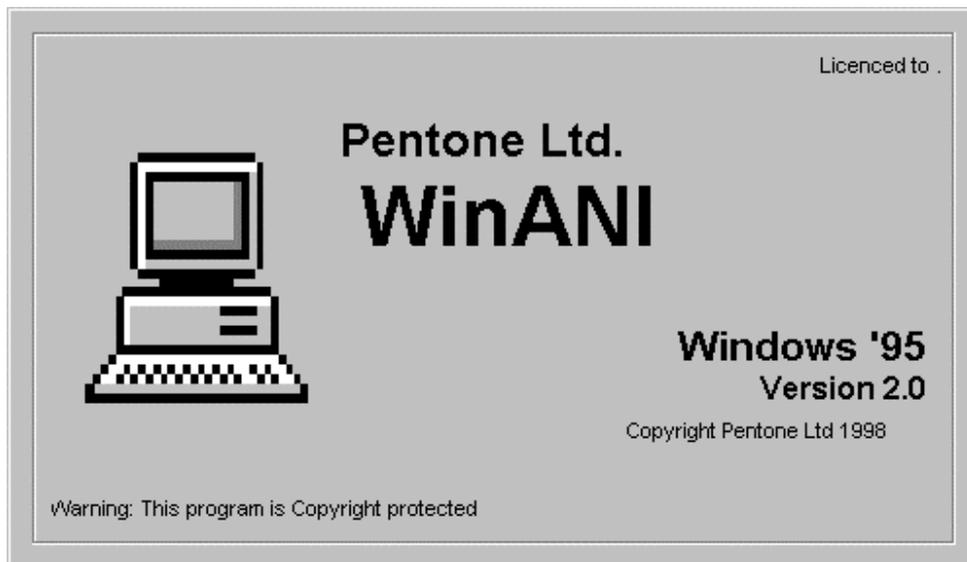




WinANI for Windows 95 SelCall Base Software



Release History

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First release



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1.0 Introduction

The Pentone WinANI 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 SelCall Parameters
- Auto ACK or confidence tones
- Radio Idents, Statuses, and Locations may be cross-indexed to text strings
- Encode Calls, Kill Calls, and UnKill Calls
- Call Logging to hard disk.
- Capacity for up to 1000 Idents, 100 Locations, and 100 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
- 640*480 VGA screen

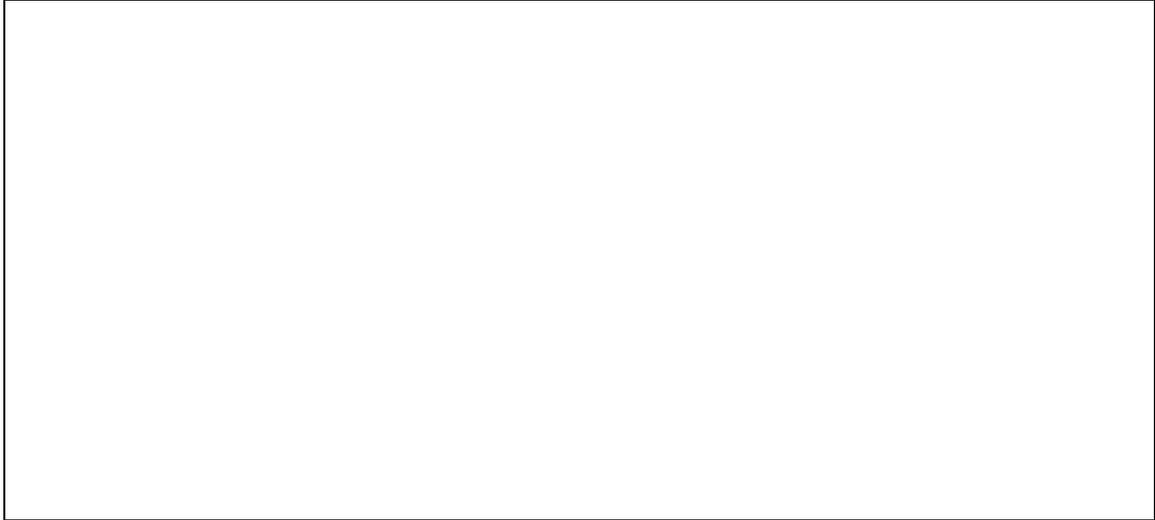
If a parallel printer is to be attached to the PC then the computer must be equipped with a second parallel port.

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, BUSY, 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 WinANI 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 WinANI 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\WINANI.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 WinANI section of the Windows 95 Registry.

General operation of the system is discussed in the Users manual (an appendix to this document).

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 WinANI 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 Alerts

Click the Setup Menu and select Setup Alerts

Separate alerts may be configured for each type of decoded call.

Example:

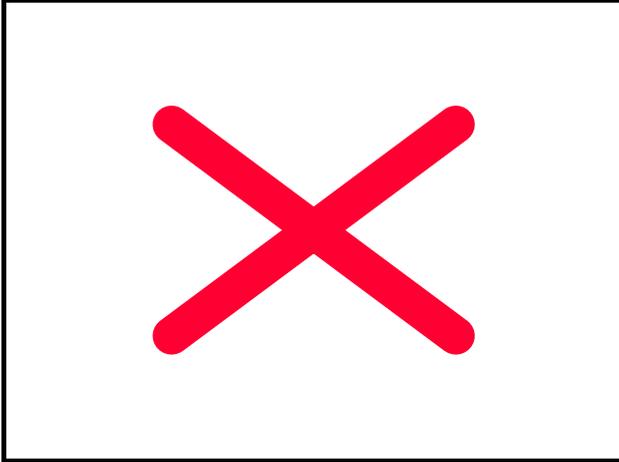
To set the file 'Ding.wav' to be played when a Standard call is decoded:

Click 'Standard Call' in the 'Decoded Call' list. The name of the currently configured alert will be displayed. Use the 'Browse' button to navigate to the required .wav file.

If the 'EM Siren Mode' box is checked then when a Priority call is decoded the configured alert will be played repeatedly.

3.2.1.3 Setup Display

Click the Setup Menu and select Setup Display

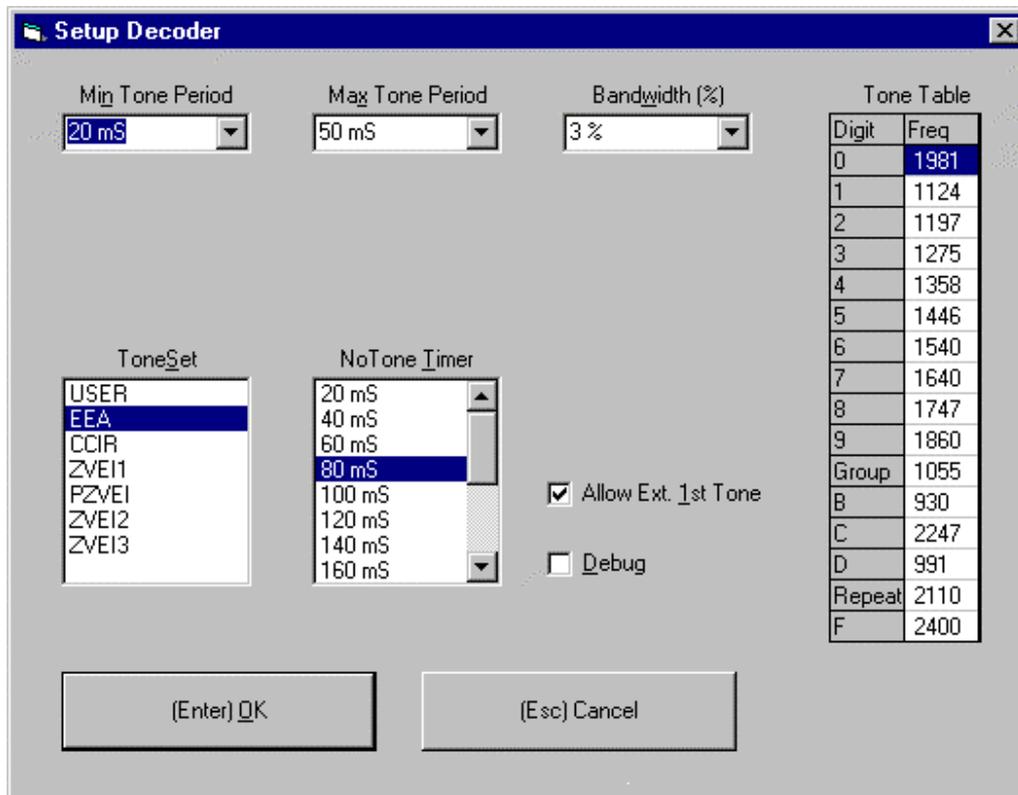


If the 'Show Time' check box is checked then when a call is decoded the time will be displayed together with the call information in the Call Stack.

If the 'Show Raw' check box is checked then when a call is decoded the full set of decoded SelCall tones time will be displayed together with the call information in the Call Stack.

3.2.1.4 Setup Decoder

Click the Setup Menu and select Setup Decoder.



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.

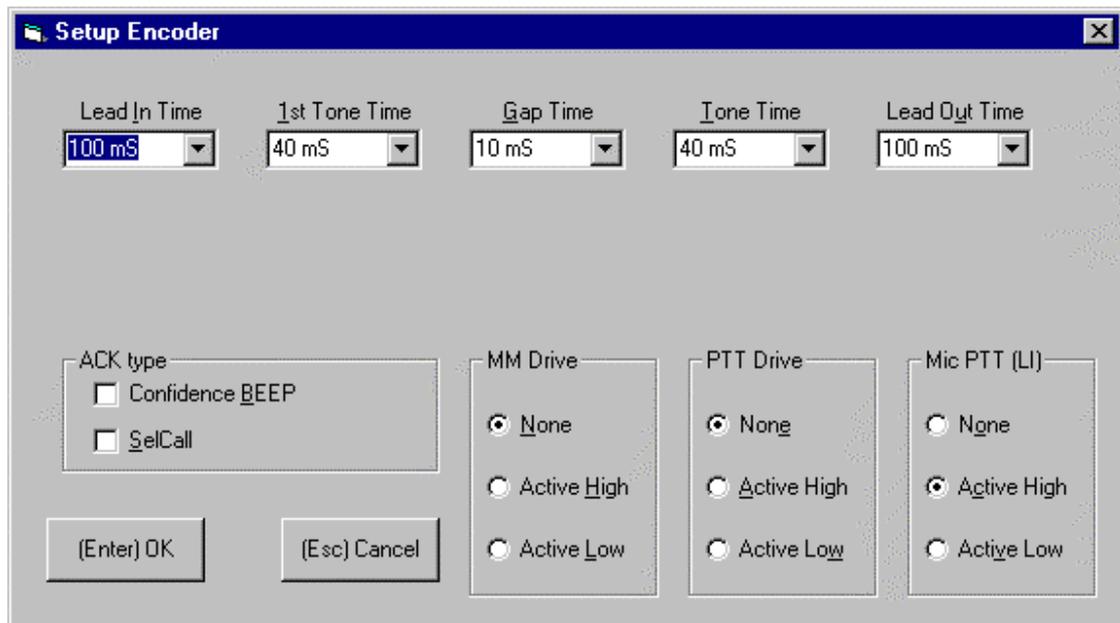
The **NoTone Timer** setting specifies the length of tone absence that will signify the end of a tone sequence. This is typically set to 1.5* the expected tone duration. e.g. for CCIR 100mS set the NoTone Timer to 150mS.

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.

3.2.1.5 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.

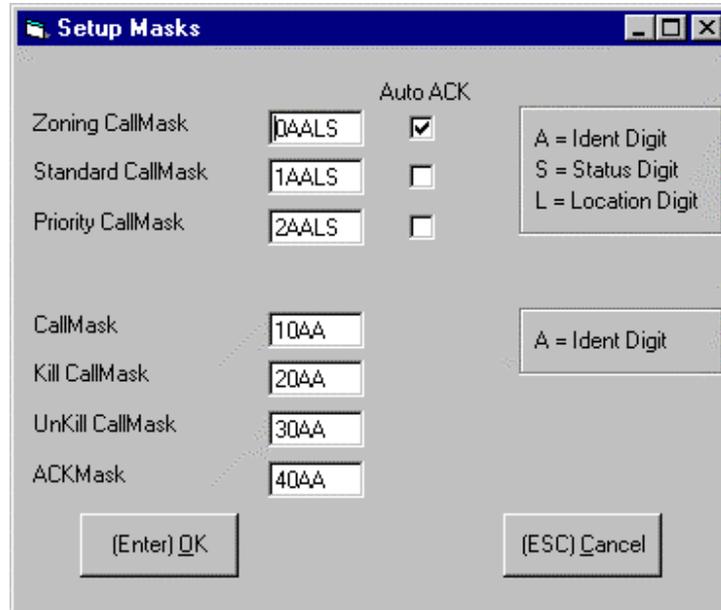
The parameters shown above are for a typical EEA 40mS application.

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.

3.2.1.6 Setup Masks

Click the Setup Menu and select Setup Masks



This menu provides 3 separate Decode masks, 3 separate Encode Masks, and an auto-ACK mask.

When a SelCall is decoded it is tested against each of the decoder masks (“Zoning CallMask”, “Standard CallMask”, and “Priority CallMask”). If the call meets the requirements of any of the 3 masks it is handled and displayed in the Call Stack. Dependant on the settings in the Setup/Encoder menu, successfully decoded calls may be automatically acknowledged.

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’), 2 Status digits (‘S’) and 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

The 3 Encode Masks (“Call Mask”, “Kill Mask”, and “UnKill Mask”) are used when generating encodes and may contain the characters 0-9 (fixed digits) and ‘A’ (Ident digits). When the computer operator requests a call from the keyboard a dialogue box appears, allowing the operator to enter the required identity digits. The identity digits are then slotted into the ‘A’ positions in the appropriate encode mask before encoding.

The ACK Mask is used during automatic (system-generated) acknowledgement encodes and is made up of the characters 0-9 (fixed digit), and ‘A’ (Ident digit).

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

Fred's Mobile Breakdown Services 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).

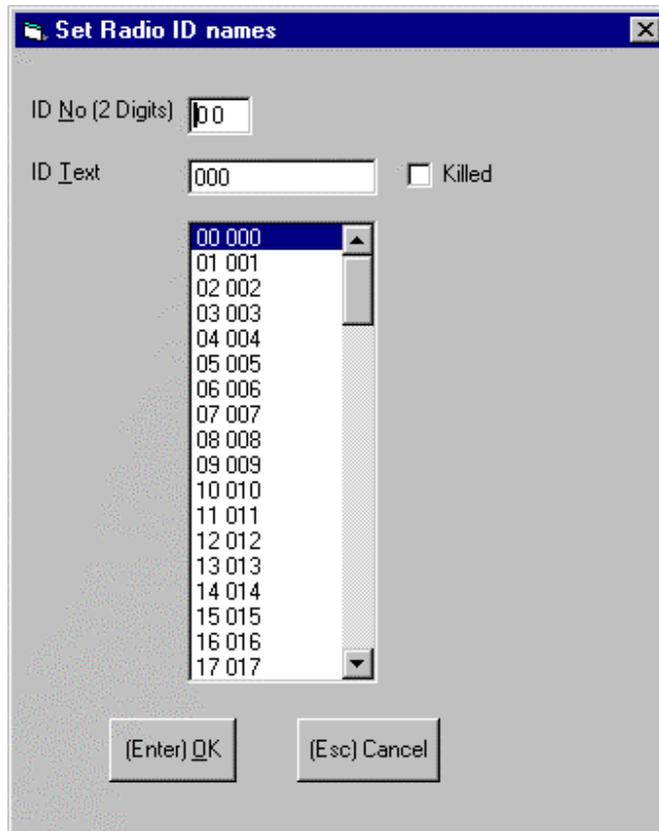
SEND B encodes '999' followed by a two digit ID.

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 CallMasks are set to '1AALS', '001AA' and '999AA'.

3.2.1.7 Setup ID's

Click the Setup Menu and select Setup ID



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

Click 'OK'

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

Example:

Radio ID number 16 is to be 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.

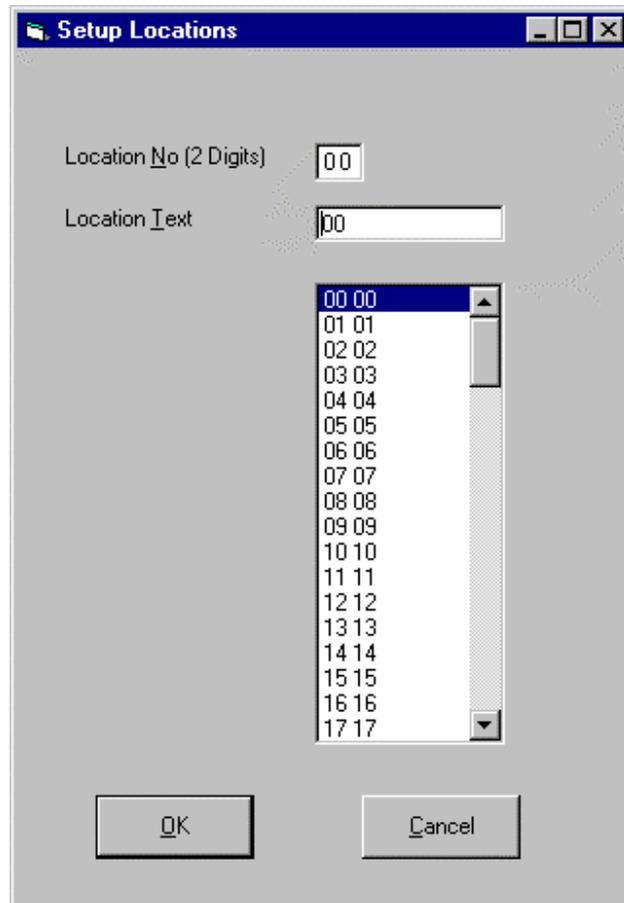
Check the 'Killed' check box

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.

3.2.1.8 Setup Zones

Click the Setup Menu and select Setup Zones



The Setup Locations menu allows radio Locations codes to be cross-indexed to text.

Example:

Location code 8 is used to represent 'Workshop'.

Type the number 08 in the 'Location No' field. The 'Location Text' field and the cross-index list will reflect the current cross-index.

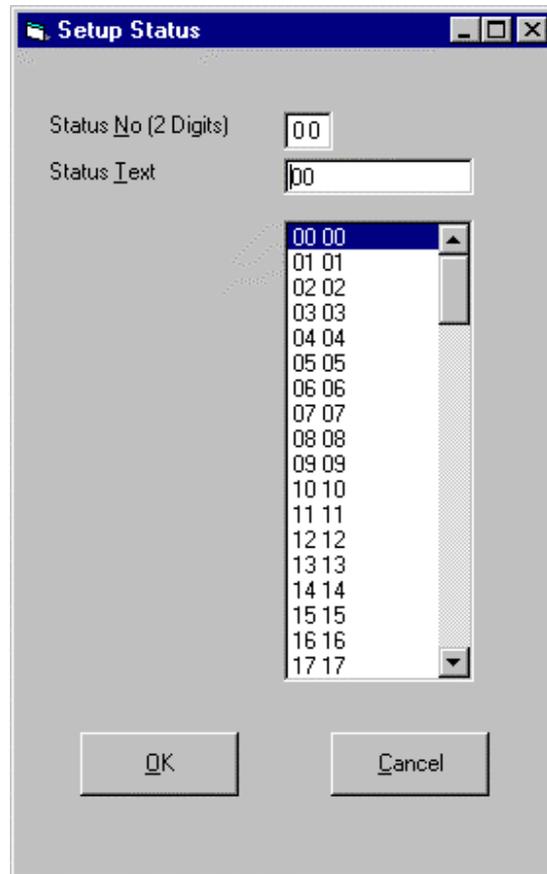
Type 'Workshop' in the 'Location Text' field

Click 'OK'

Calls decoded from location 8 will now be displayed as originating from 'Workshop'.

3.2.1.9 Setup Status

Click the Setup Menu and select Setup Status



Example:

Status code 5 is used to represent 'Clear'.

Type the number 05 in the 'Status No' field. The 'Status Text' field and the cross-index list will reflect the current cross-index.

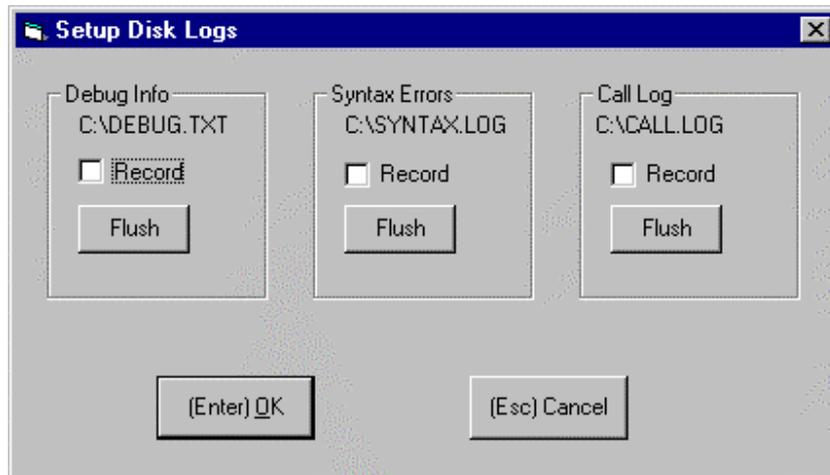
Type 'Clear' in the 'Status Text' field

Click 'OK'

Calls decoded from radios set to status 5 will now be displayed as 'Clear'.

3.2.1.10 Setup Logs

Click the Setup Menu and select Setup Logs.



WinANI 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 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:

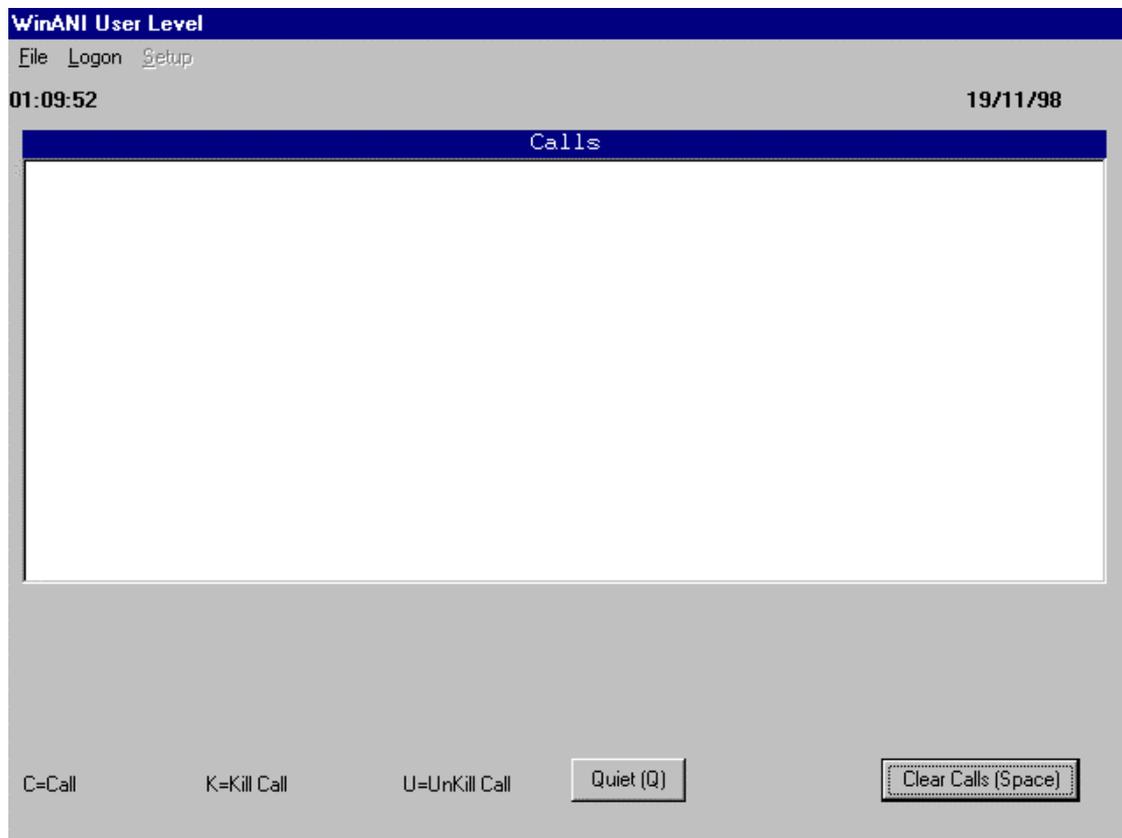
```
Date,Time,START LOG,,,,,  
Date,Time,CALL,encode,,,,,  
Date,Time,KILLCALL,encode,,,,,  
Date,Time,UNKILLCALL,encode,,,,,  
Date,Time,AUTOKILL,encode,,,,,  
Date,Time,AUTOUNKILL,encode,,,,,  
Date,Time,ANICALL,decode,ID Text,Status Text,LocationText,  
Date,Time,ZONECALL,decode,ID Text,Status Text,LocationText,  
Date,Time,PRIORITYCALL,decode,ID Text,Status Text,LocationText,  
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 Users screen comprises the Call Stack, The “Quiet” button, and a Clear Stack button. When a Call is decoded the radio ident text is displayed at the top of the Call Stack and an alert beep is generated. The 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. If EM-Siren mode is selected (See Setup Alerts), then when a Priority Call is decoded the configured alert will be generated repeatedly. The alert may be cancelled by clicking the Quiet button, or pressing ‘Q’. The ‘C’, ‘K’, and ‘U’ keys are used to cause a call Encode. On pressing one of these keys a dialogue box will be displayed prompting the user to enter a number of Ident digits. The number of digits requested will depend on the setting of the relevant call mask.

4.1 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, WinANI locks-out certain windows key combinations including ALT-TAB,ALT-ESC, CTL-F4, and the Start Keys.

